Clinical Lecture
ON
PYO-SALPINX,
WITH REMARKS ON THE OLD FAITH AND THE NEW REGARDING PARAMETRITIS AND PERIMETRITIS.

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GENTLEMEN,—I have just had occasion to remove a specimen of pyo-salpinx from a woman with subacute peritonitic symptoms. The specimen shows the association of pyo-salpinx with great enlargement of the broad ligament. This pathological connexion depends, I think, largely on the date of the disease, and it is fortunate that the operation of this morning has enabled me to remove so characteristic a specimen of the disease at its most instructive period. This period is usually accompanied by definite physical signs which have long been known clinically as evidence of an inflammatory disease common among women. The exact nature of this disease—how it commences—what are the tissues primarily attacked—all involve questions regarding which there has been for a long time considerable dispute. The specimen before us explains much that is difficult to reconcile between the old faith and the new on the subjects of parametritis and perimetritis.

Briefly stated, the old faith on these diseases was as follows:—Parametritis is an inflammation of the cellular tissue of the broad ligament; it is a common disease; it generally terminates in complete resolution; it frequently ends in abscess; it is rarely fatal. Perimetritis is inflammation of the peritoneum around the uterus and its appendages. Except for a form of very mild and limited character which has no symptoms and may be ignored, perimetritis is a rather rare disease. It is usually accompanied by grave and (so-called) septic symptoms. It is not infrequently fatal.

The new faith is as follows:—Parametritis as the name of a common disease is altogether a misnomer; it is occasionally met with, but is almost a pathological curiosity. Perimetritis is salpingitis. Salpingitis is the essential disease, which has been wrongly or inadequately labelled as parametritis or perimetritis.

This is the new faith which is gaining ground day by day. It is truer than the old faith, and the gods of the past will slowly go down before it. But there was something in the old faith which it is not well to lose—something in "parametritis" there is a danger of ignoring; and it is to this I wish to specially direct your attention. Before examining the specimen let me give you the clinical history of the case.

E. H——, aged thirty-nine, married fifteen years, having seven children, the youngest of whom was fifteen months old, and but recently weaned, was sent to me by Dr. Scott on April 17th. She had been "losing" almost continuously for three weeks, and complained of hypogastric pain. The uterus was enlarged and tender, and all the signs and symptoms were consistent with and suggestive of early pregnancy with threatened abortion. The sound was not used. Rest was advised, and viburnum prunifolium prescribed. Some temporary improvement followed, the hæmorrhage ceasing. On May 8th she returned with feverish symptoms (temperature 100°) and great increase of pain. On examination the uterus was found to be anchored by a mass on the left side of the vaginal roof. The mass was hard and tender, extending across the vaginal roof, and directly joining the uterus high up by a prominent posterior tumour, "feeling like a retroflexed fundus." This was diagnosed at the time as tubal. The patient from this date was kept entirely in bed, and every means were taken to bring about resolution of the inflammatory process, but without any good result. On May 11th she was seen at home. She had severe abdominal pain, and frequent vomiting. The temperature was higher, and the retro-uterine tumour large and exquisitely tender. Both signs and symptoms were considered indicative of pyo-salpinx. In spite of rest and appropriate treatment, the patient was evidently getting worse. The tumour, diagnosed by experienced touch as tubal, the hypogastric pain and vomiting, the febrile state—all markedly increasing during a period of rest—formed not only sufficient ground but proper ground for operative treatment. This was accordingly recommended to the patient and her husband, the nature and possible effect of the operation being fully explained. Her condition was evidently serious. Consent was readily and gratefully given, and the patient was removed to the in-patient department at Spark-hill. Two days later (after due consultation) I operated. What were the steps of the operation? The abdomen was opened by a small incision above the pubes. Then, with the forefinger of the right hand in the vagina and the first and second fingers of the left hand inside the abdomen, the prominent tumour was exactly mapped out and slowly unpeeled from the numerous adhesions surrounding it. When sufficiently liberated, the right hand was withdrawn from the vagina and thoroughly washed in clean hot water, the rest of the manipulations being abdominal only. After slight enlargement of the incision, the mass which you see was pulled out of the abdomen and its base ligatured. As the ligature was tightened the tubal portion of the pedicle was cut directly across by the ligature. I caught the divided portion with the forceps so as to keep it for a short time under observation; but the occurrence did not alarm me, nor did I expect that any further ligature of the tube would be necessary. The division of the Fallopian tube by the ligature often happens when the operation is performed during the acute inflammatory period, and I have never known any bad result attend the accident. The reason of this we shall see later on. The remainder of the base or pedicle was securely tied, and the tumour above cut off with scissors. On the left side the tube and ovary were involved in the surrounding adhesions, but were both fairly normal in size and consistency. These were removed at the same time, because it has been found that if the uterine appendages of one side have been removed for inflammatory disease the same disease is apt to return on the other side, and this occasionally within a short time after recovery from the original disease and operation. It is therefore judged unwise in these cases to allow the patient to run the risk of early recurrence and a second operation. Whether in every case of inflammatory origin this practice is sound or not may still be considered an open question, but the balance of general opinion and experience is in favour of its soundness. The pelvis and abdomen were now well washed out with hot water, the bleeding from the separated adhesions being somewhat profuse. A drainage-tube was left in Douglas's pouch, and the abdominal wound was closed with silkworm-gut sutures.

Now let us turn to the specimen removed. There is much more to be learnt from this than is involved in its relation to the operative proceedings already described. You will see it is a mass of considerable bulk, as large as a boy's fist, which in both size and shape it roughly resembles. It is not easy at first to differentiate the structures composing it. Here, however, is the Fallopian tube, the cross section of which (made by the silk ligature close to the uterus) is quite as large as a threepenny-piece. If we look closely at the cross section we shall see that this increase of size is caused solely by the swelling and enlargement of the walls of the tube, its lumen here being undilated. Furthermore, look as closely as you will, you will yet fail to see any vessel of considerable size divided. This explains the absence of serious hæmorrhage at the time of operation. The vessels of the Fallopian tube itself are always small in size. Now, if we trace the tube outwards, we shall find it increasing in size, and what should be its fimbriated extremity lost on the globular and thickened broad ligament, as the ball of the thumb may be said to be lost in the palm. Here is the abscess, not so much in the tube, though it is partially in the tube, as beneath the adhesions which have welded the outer extremity of the tube to the altered broad ligament. In many cases the abscess invades the ovary itself and is strictly tubo-ovarian, but in this case the ovary, as you see, can be entirely separated from the under surface of the greater bulk of tissue, leaving the abscess strictly limited to the Fallopian tube and broad ligament. I have divided the wall of the abscess just where the outline of the tube is lost and pus is freely escaping. The wall is thin; it might easily have ruptured here a few days later. But what is all this tissue, nearly as thick as the palm of my hand—this,

which is neither tube nor ovary—this, which you see has been cut across in a line with the cross section of the tube? This is none other than that fold of the broad ligament which in its normal state is semi-transparent. Now it is quite half an inch in thickness, and is traversed by large vessels almost as big as the radial. It is therefore this portion of the base or pedicle which needs and receives most careful ligature by the surgeon. Here, then, is the parametritis or cellulitis of the old authors still existing, coexisting with the salpingitis, breaking down into pus at the confluence of the two, so that it is difficult to say whether the abscess belongs more to the tube or more to the broad ligament. Should I have found the same condition if the patient could have waited safely to a later date? I think not. The abscess would have been larger than it is. It would probably have distended the tube to a greater degree than is now the case, but much of the swelling of the adjacent tissue would have disappeared In other words, as I have written elsewhere, the parametritis undergoes resolution; the perimetritis or salpingitis too often does not. On the other hand, it is of course possible that the abscess might continue to invade the cellular tissue. In this case the late pathology of the affection might differ considerably from its early stage, and it is because the pathological sequence is hard to retrace after repeated abscesses have formed and burst into the vagina, bladder, rectum, or externally, that the pathology of a recent case like this is so much more instructive than that of one of long duration. Even in chronic cases, however, the main seat of mischief has often been found to be distinctly tubal.

Finally, let us criticise the operation in the light of the specimen before us. Notwithstanding this mass of morbid tissue, which at first sight looks so full of irrecoverable disease, was the operation necessary? I am desirous of giving every credit to the policy of caution and non-interference, and wish to examine this question impartially, as if the work I have done myself had been done by a stranger. I am ready to acknowledge that all these changes we have noticed are undoubtedly inflammatory; that, with the exception of the abscess itself and the obliterative adhesions of the fimbriated end of the Fallopian tube, all the other pathological changes might absolutely disappear with time, leaving scarcely a trace behind them. Why, then, was the operation performed? You will remember that tubal abscess was diagnosed, and that this was already causing distinct symptoms of local peritonitis. Under these circumstances the operation was performed for two reasons: (1) to save life, and (2) to bring about a speedy recovery from the disease. I will consider these reasons separately.

First, to save life. Let me tell you of a tragic incident which happened in my practice a few months back. I was telegraphed for by a surgeon living some hundred miles away to see a patient of his who was seriously ill. The place was rather inaccessible, and I could not arrive at my destination until about midnight, having to post the last few miles of the journey. We saw the patient on my arrival. The physical signs in her case were almost a counterpart of those which I have described as present in the case before us; the symptoms were decidedly worse. Peritonitis was undoubtedly present, but there had been no vomiting for several hours, and the patient stated that she was in less pain than she had been. The history was an acute one of but little more than a week's duration. Her temperature had reached 104° F. There was no difficulty in diagnosing acute inflammatory disease of the uterine appendages on one side, with probable pyosalpinx. Immediate operation was advised, and after some consultation it was decided to carry this out early in the morning so soon as the necessary arrangements could be made. When we met a few hours later the patient was manifestly dying, her death taking place about half an hour later than the time agreed upon for operation. In this case intra-peritoneal rupture of the abscess had probably taken place, most likely before I saw the patient, for in cases of perforative peritonitis, especially when morphia has been given, the last few hours of life are often strangely free from marked symptoms, and the death appears to be one of sudden collapse. Similar cases are, unfortunately, by no means rare. Dr. Boldt of New York has recently reported some interesting and instructive examples of this disease in the *American Journal of Obstetrics* for March. The history of one of these cases is exactly similar to that which I have just related, and the fatal issue was as sudden and comparatively unexpected. The danger, then, of sudden death from pyo-salpinx is a real one—one that needs reckoning with while there is time; and it is no stretch of imagination to regard the operation for the removal of tubal abscess as one of direct life-saving importance. Doubtless it is only in the minority of cases that the abscess bursts into the peritoneal cavity, causing fatal peritonitis. But the danger of this is an unknown danger in every case. You see at once the necessary consequence: that *every case of pyosalpinx justifies operative interference*—not necessarily in all cases removal of the appendages. What is right in the practice of one surgeon may not be so in another, and sometimes the operation is full of difficulty and danger. But it certainly justifies abdominal exploration, evacuation of the pus, and, if possible, removal of the parts affected.

Side by side, however, with the purpose of saving life, another purpose only second to it in importance may well actuate the surgeon—namely, that of ensuring a speedy recovery for the patient. When life is not directly threatened by a purulent salpingitis, what happens? Adhesions form around the abscess, and when it bursts the pus finds its way into one of the natural cavities of the pelvis—the vagina, bladder, or bowel,—or slowly comes to the surface externally. What is the duration of these cases? It has often to be measured by years, and three years from the date of onset to the date of recovery has been frequently used by by gynæcologists as a fair average computation of the time involved by the natural course of this disease. The abscess is by no means always single. It is very often bilateral, and when the inflammation is severe secondary abscesses are apt to form like those around the knee-joint after purulent synovitis. In a case which interested me greatly several years ago, and of which I took careful drawings, a large abscess of the tube itself was accompanied by two separate abscesses of considerable size just beneath the peritoneum. All such cases, if not fatal, must necessarily run a very protracted course And it is this weary, anxious, painful time of chronic suffering which the operation of removal can abolish in the best and most perfect manner. If all goes well in the case we have been considering, how soon may we expect her to recover? In three weeks she will be convalescent; in six or eight weeks she will probably be doing her usual household duties at home.[1] This is surely a development of the "healing art" for which we may all be thankful, and none more so than the woman who suffers and the surgeon who ministers to her recovery.

THE

TREATMENT OF SCROFULOUS GLANDS.[2]

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IN the history of medical literature there is no more remarkable feature than the intermittent conflict which has been active for centuries around the terms "scrofula" and "tuberculosis." These terms have presented themselves at one time with a brilliant individuality, and at another have become blurred and lost beneath a cloud of mere verbiage. It has been shown at one period that scrofula and tuberculosis are identical conditions, and at another that they are fundamentally unlike. It has been demonstrated that both disorders are due to a neoplasm, to a septic change, to an infection, to an inherited diathesis, to a purely local process. Scrofula and tubercle have each played the part of Dromio in a pathological "Comedy of Errors." The progress of any knowledge of the subject has been obscured by theories and obstructed by conflicting statements, and in the mouths of men "tubercle" has been from time to time an untranslatable word. A recent German author has written the literary history of tuberculosis. The subject has absorbed 500 closely printed pages; and while the work contains a record of many brilliant scientific achievements, it is concerned chiefly with the handling of a once simple matter, rendered huge and unwieldly by mere flatulent discussion. Unfortunately this long period of scientific doubt has had a serious influence upon the treatment of strumous disease. Those who, on the one hand, have urged that

[1] This expectation was realised.—J. W. T.

[2] A paper read before the Harveian Society, April 25th, 1889.

scrofula is due to a tubercular process of a kind of which acute miliary tuberculosis is the finished type have discouraged all local modes of treatment on the ground that local measures cannot influence a constitutional disease. They have maintained that the meddling with strumous deposits has led to a more general infection of the body, and that an operation upon a scrofulous subject has little prospect of being surgically complete. On the other hand, it has been asserted that strumous manifestations are essentially local, that they may remain local from first to last, and that they are amenable to actual cure by no other than local means. It is necessary at the outset to make clear the position taken in the present paper with reference to these two attitudes.

All scrofulous manifestations are due to the tubercular process. It is true that in all the tubercle bacillus has not been uniformly detected; but in connexion with this point it has yet to be shown what part the bacillus plays in the process, what local conditions influence its development, to what extent it is essential to all stages of the change, and what is the possibility of its remaining undetected. The tubercular process is an inflammatory process of a peculiar type, and in the production of its special features more would appear to depend upon the pre-existing state of the tissues than upon the exciting cause of the inflammation. Injuries of precisely equal degree produce in one child simple synovitis, and in another strumous disease of a joint. It may be said that the phthisical lung, the white swelling, the carious spine, the tubercular testicle, and the scrofulous gland in the neck are all due to the same process, modified only by locality. Such diseased parts may as reasonably be termed tubercular as simple pneumonia; traumatic synovitis, acute orchitis, and the enlarged gland from a sore heel are classed as inflammatory. There is in the tubercular subject a certain tissue disposition as a rule. In the strumous this textural weakness is met with in individuals possessed of fairly defined physical characteristics, the heirs usually of certain hereditable "points," or the subjects of certain intangible weaknesses which place them in the vague category of the "delicate." Their grosser features are shown in peculiarities of the blood and lymph circulation, in a disposition to certain inflammatory states, notably to catarrh, and to other tissue habits which need not here be specified. The main naked-eye feature of the scrofulous process—so far especially as the glands are concerned—is the production of caseous matter. Caseation is very rarely indeed met with in chronic adenitis, except as the result of struma. In the latter condition it is almost constant when the disease follows a typical course. The term "caseous deposit" is frequently employed, and the fresh section of certain strumous glands gives some colour to the expression. In a strict sense, however, there is no deposit. The caseous gland has been the seat of a chronic inflammation of a very low type. Circumstances, which concern mainly the state of the blood circulation and the lymph current, have caused the inflammatory products to remain unabsorbed. These products, severed from all vascular influence, have undergone the passive physical change known as caseation. The cheesy mass is absolutely non-vascular. It can experience no further vital changes. It is little other than a foreign body in the substance of the gland. It may in time, by a simple chemical process, become calcareous, and in such condition remain for an indefinite period harmless. It may become surrounded by an area of healthy inflammatory action, and, being thus isolated and encapsuled, may, like other sequestra, be rendered innocuous. Both events, however, are rare. As a rule, the caseous nodule plays the part enacted by other foreign bodies. It excites a suppurative inflammation in the tissues which surround it, and the pus thus produced makes for the mass a way to escape. There are no grounds for stating that the cheesy deposit itself "breaks down into pus." An inert, non-vascular, helpless mass of débris cannot exhibit the phenomena of suppuration. It is a sequestrum; it imitates the career of a fragment of necrosed bone; and as a dead tissue it is ultimately cast forth from the body when the abscess which surrounds it has made its way through the skin. A gland, therefore, which is the seat of caseous change has within itself little prospect of recovery. It may remain quiescent for an unknown period, but the probability is that it will suppurate.

The treatment of scrofulous glands involves many phases and many difficulties. Although it cannot now be said, as Malcolm declares in "Macbeth, that struma is "the mere despair of surgery," it is still a fact that the disease may withstand every art which modern surgery can ply. The larger proportion of the cases, however, yield readily and most kindly to local and general measures, and even when the patient is "all swoln and ulcerous, pitiful to the eye," it is possible to claim for surgical treatment a more than occasional cure.

The *general treatment* of a case of scrofulous gland disease may be very briefly considered under the following heads:—

1. The patient should be placed under the best hygienic conditions, and in a large proportion of hospital cases this is the main circumstance in the treatment. Special benefit attends a long residence on the sea coast. Those places appear best suited for strumous disease where acres of seaweed lie exposed to the sun at low tide. Patients will often improve rapidly at Margate who have experienced no benefit from a stay at Brighton. It is well if the winter can be spent in some warmer climate, such as is afforded by the Riviera, and the summer in some suitable town upon the English coast. Among foreign health resorts Kreuznach deserves mention. Cases of widespread gland disease of a low grade improve there, and the same may be said of glands which are suppurating extensively. The place is, however, depressing, and patients who have resided there speak of their stay in Kreuznach with an air of melancholy.

2. A large proportion of strumous patients possess a decidedly feeble circulation, which is shown by the bluish extremities, the growth of fine hair upon the limbs, the coarseness of the subcutaneous tissues, and the frequent occurrence of chilblains. Such patients present a distinct type of the scrofulous physiognomy, and good illustrations of that type are to be met with in the sodden-looking, purple-faced, clownish children who are now and then seen shuffling their chilled limbs in the ranks of a charity school parade. Such individuals require to be properly clad, and need to have the skin covered from the neck to the ankles and the wrists with wool.

3. Of the diet of the subjects of gland disease nothing need be said; and in the matter of medicines there is little beyond the well-worn circle of iron, arsenic, quinine, and cod-liver oil. Iodine, in the form of Kreuznach water, appears in many instances to act with distinct benefit. The very general administration of the syrup of iodide of iron partakes rather of the nature of a rite than of a serious feature in treatment, and probably ranks in value with the royal touch. I have not been able to ascribe any certain or specific advantage to the use of sulphide of calcium.

The local treatment embraces the following points:—

1. Any disturbance of the periphery whence the affected glands derive their lymph vessels must be dealt with as a matter of the first importance. Cases of primary infection of the cervical glands are exceedingly uncommon. In the great proportion of instances a chronic inflammation is induced in the gland by some trouble active in the area from which the lymphatics concerned arise. Many cases of strumous disease commence as a result of the pharyngeal catarrh or sore-throat incidental to certain of the eruptive fevers. Common causes of disturbance—so far as the cervical glands are concerned—are enlarged tonsils, scrofulous pharyngitis, affections of the mouth and teeth, coryza, ozæna, otorrhœa, phlyctenular ophthalmia, and eczema of the scalp. It is of little avail to attempt the reduction of an enlarged gland if an inflammation of its substance is maintained by neglected caries of the teeth or persistent sore-throat. If it be recognised that the glandular disorder is secondary, it will be obvious that the first local measure in the treatment of the case must be directed against the primary local cause. To blindly paint a gland with iodine while the eczema of the scalp which primarily induced it is left to flourish is to waste a valuable drug.

2. Specific local applications to the glands, as distinguished from the common applications in general use in surgery, have met with but discouraging success. Iodine paint is probably in nearly all cases harmful. Its reckless use is a surgical mystery, and its employment is of interest as a relic of the customs of a bygone age. Ointments often appear to have some good effect, and the benefit that attends them depends possibly more upon the rubbing than upon the composition of the unguent. Compresses of seaweed, of Kreuznach water, and of sea water act obviously as cold applications, but it does not appear that they can claim any advantage over the simple water dressing. The gland should be protected from all irritation, and from fluctuations

of temperature. These ends can be met by the use of a slender silk scarf.

3. The most important local measure consists in giving rest to the part. Rest is a primary factor in the treatment of all inflammatory conditions. The disregard of this simple means is often forcibly illustrated in the treatment of the strumous neck. A patient with an inguinal bubo in a state of suppuration is not allowed to walk, and the subject of inflamed glands in the axilla is not allowed to use the arm. Yet a child with an identical affection of the cervical glands is permitted to keep the neck in almost incessant movement. The neck of a child is seldom at rest, and the obstinacy of glandular affections of the part, and of the sinuses that result therefrom, is certainly due in very great measure to the fact that the movements of the neck are in no way restrained. The neck may be kept at rest by a simple home-made stock, or by the wood-wool collar used by Mr. W. Knight Treves at the Margate Infirmary, or by the special splint I described some years ago.[2] In children or adults with long hair this splint may be so worn as to be unobserved. Of the good effects of the treatment by rest I can speak in emphatic terms, especially in the earlier stages of the disease, and in cases where suppuration is threatening. The measure of the good result may be estimated by comparing cases of inguinal gland disease treated by rest with an equal number treated during unrestrained movement of the limbs.

4. The remaining point concerns the operative treatment of gland disease. A large proportion of the cases yield to the general and local measures already described. A not insignificant residuum remains in which operative measures have to be considered. These cases include such as have resisted a milder treatment, such as are deliberately progressing, and such as are in some stage of suppuration. Into the physical characters of the gland which will at some time or another demand operation it is out of place to enter here. It must be allowed that the caseous gland is—except in the rarest instances—hopeless, and that neither climate, nor drugs, nor splints, nor local applications will cause the mass of dead tissue to disappear. The prognosis is probably on a precise level with that in bone necrosis. When once a sequestrum has formed, it is not hasty to assume that it will be separated, and that the tissues will not resume their normal quiet until the dead matter has been got rid of. It is possible that a fragment of necrosed bone may become encapsuled and rendered for an indefinite time inert; but in advising treatment surgeons speculate little upon that possibility. Many of the operations performed upon scrofulous glands may be at once disposed of. The treatment by crushing, by solvent or irritant injections, and by the seton, may be characterised as bad. A scarcely milder criticism may be passed upon the method of treatment by cautery puncture, which I was indiscreet enough to advise in 1882. I still believe this method to be the best for evacuating pus situate in the substance of large glands, provided that no more radical measure is intended. Glands which have been treated by cautery puncture have become shrunken and have disappeared, but the measure is of very limited application and is uncertain. The removal of a diseased gland by scraping out its softened substance with Volkmann's spoon and applying the actual cautery to the wall of the resulting cavity is a procedure which is applicable to certain cases only. It cannot claim to be regarded as a general measure. It should under no circumstances be employed in instances where the skin is still sound. It is of great value in cases where suppuration has occurred, where a sinus persists, and where it would be difficult or impossible to remove the relics of the diseased gland with the scalpel. The scraping should be complete, every trace of disease should be removed, the cavity left should be dressed from the bottom, and the neck should be kept absolutely at rest during the healing process. An unsightly scar is apt to result, and it is not unusual for the cicatrix to break down once or twice before it finally heals. Operations with Volkmann's spoon are, in the case of large gland tumours, very commonly incomplete, and have to be many times repeated. When the depths of the neck are invaded with the spoon the operation must certainly be classed as dangerous. Excision of strumous glands offers the simplest, the safest, and the most certain method of treating this obstinate affection. The operation is in accord with the primary principles of surgery, is definite, and is attended with admirable results. Recent improvements in our knowledge of the treatment of wounds have rendered the operation possible, and with Mr. Treves of Margate rests the chief merit of carrying the measure into actual practice. In favour of the treatment by excision the following points may be urged: the glands are completely and cleanly removed; the wound is an incised wound; the resulting cicatrix is thin, fine, and white. If the case be dealt with early, it must be further pointed out that the local spreading of the disease from gland to gland is arrested, the mass may be removed through a simple incision before suppuration supervenes, an unsightly and characteristic scar is avoided, and the wearisome period of the expectant treatment is replaced by a measure which can claim to be final. Although glands can be removed at any period by excision, it is needless to say that the operation is the easier the earlier it is performed. The number of the glandular swellings offers no bar to the excision. From one patient I have removed eighty-four glands, all of which were caseous, while not a few were suppurating. The sooner the operation is performed, the less extensive is the area involved and the less conspicuous is the scar. The wounds should follow as far as possible the natural lines or folds in the skin of the neck, and should be horizontal rather than vertical. An incision made in the natural cutaneous line at the level of the hyoid bone may lead to a scar which becomes actually invisible. The gland should be *cut* out, not *torn* out. In the treatment of the resulting wound stress may be laid upon the following details: All bleeding must be well arrested. The wound must not be washed out by too strong an antiseptic solution. The edges of the incision should be very carefully adjusted, and maintained in position by sutures of silkworm gut, which are removed on the fifth or seventh day. No drainage-tube should be employed if it can be avoided; if the use of one is inevitable, it should not be retained for longer than from twenty-four to forty-eight hours. The part should be dressed with sponge only, and should be subjected to sufficient direct pressure to obliterate the "cavity" of the wound. The neck must be kept absolutely rigid for not less than ten days; and to this rule no kind of exception should be made. It is impossible to carry out the two last-named propositions if the patient has greatly enlarged tonsils. For no measure which has been employed for the treatment of the strumous neck can such excellent results be claimed as attend upon the simple excision of the glands. Considering the grave complications attending the disease, the tedious path it follows, and the disfigurement it leaves, it may be permitted to regard this operation as not the least of the improvements in modern surgery.

Wimpole-street, W.

[2] THE LANCET, June 5th, 1886.

AN ESSAY ON THE

FUNCTIONS OF INDIFFERENT CELLS IN THE HUMAN ORGANISM.

BY JAMES DICKINSON.

IN the human organism, the bulk of which is made up of highly differentiated elements, there exist certain elements which show no differentiation whatever. These amœba-like cells retain even that power of movement from place to place which a cell first forfeits as the penalty of specialisation. They have a wider anatomical distribution than any other cells, either aggregated in masses of lymphoid tissue, or forming the corpuscular elements of circulating fluids, or, as errant leucocytes constituting essential though inconspicuous features in the minute anatomy of all tissues. They are called by various names: in the blood they are called white blood-corpuscles; in the lymph channels, lymph-corpuscles; elsewhere, leucocytes. What definite share these elements possess in the working of the economy is a question which, to judge from the records in some leading text-books, has not much attracted the attention of physiologists. Whatever challenge they have undergone has been exclusively in one or other of their several characters, and even in such instances their functions have been but slightly investigated. A muscle-cell is a muscle-cell all the body over, and, no matter where it occurs, is recognised as an element in a peculiar tissue, having always the same peculiar

function. The amœboid elements I refer to are as distinctive (in contrast with the specialised elements which make up the bulk of the body) as the elements of any tissue. But they have not received recognition as being themselves elements of a tissue—a tissue presumably performing the same kind of function in all its distribution just as the tissues constituted by muscle-cells, cartilage-cells, or nerve-cells perform respectively their own peculiar functions wherever we may find them.

It may safely be assumed that undifferentiated cells or leucocytes have a normal function in the body, and also that it is worth while to inquire what that function is. It cannot be conceived that there exists in the body a tissue which has not a function, nor surely a function which is unworthy of study. Leucocytes differ from amœbæ in this, that they are not independent organisms but items in a community. In this cell community it is seen how each cell lives its own life in a way that is useful to the rest, the difficult ideal being attained of serving its own and its neighbours' ends and the whole community at one and the same time. Is the leucocyte an outcast in this ideal community? Is it the one selfish individual, living only for the indulgence of its own habits? If so, surely it must have perished in the long struggle for existence, and have paid the inevitable penalty that waits on all products of evolution for which Nature in her further developments has no need. Evolution as it concerns organisms in their mutual relations is but a gross naked-eye result of a process whose true seat is in ultimate elements. As regards the gross result, it is known that an organism epitomises in its development the whole course of development from the primitive unicellular organism up to its own point in the scale. Meanwhile within the organism is being epitomised the whole course of cell-evolution through the various stages of cell-differentiation. But in any particular organism only those stages of cell-evolution obtain permanence which are of use to that organism. Accordingly we may not only rest assured that leucocytes have a function, but we may turn confidently to their peculiar amœba-like characters for an explanation of their function, and seek in their very independence and apparent selfishness that usefulness to their fellows that justifies their existence in a community in which every cell executes a special task in the service of the whole. Moreover leucocytes, which are the representatives of the primary undifferentiated stage of cell-evolution, not only obtain permanence in the mature human organism, but form such a considerable proportion of the whole cell community as to suggest the conclusion that their function is one of great importance. For it must be remembered that lymphoid tissue, made up mainly of undifferentiated elements, has a most extensive distribution, being diffused throughout the whole alimentary and respiratory tracts, forming the main constituent of the so-called lymphatic glands, and being largely present in the red marrow of bones and in the spleen; that every artery, vein, and lymphatic vessel is a channel through which a constant stream of undifferentiated elements is passing; and, lastly, that among the elements of every other tissue isolated cells of this type are always found wandering. Not only have these amœba-like elements been treated with neglect during their lives, but their dead bodies, under a new name—pus,—are often despised and hated, or at all events regarded with suspicion. Because they are concomitants of danger they are treated as the cause of it. The same reasoning might with equal justice be used to bring dishonour upon soldiers that have died in defence of their State. That leucocytes are deserving of more consideration than they get, living or dead, it is the object of this paper to show.

There occurs in Professor Michael Foster's Text-book of Physiology (1884 edition) the following statement: "While we are able to attribute to the numerous red corpuscles an important respiratory function, we are unaware at present of any special work carried on by the scantier white corpuscles while they are being hurried along in the blood current. As far as our present knowledge goes, they seem to tarry in the blood only on their way either to be broken up or to pass into the tissues." The qualification "while they are being hurried along in the blood current" might lead one to infer that the above confession of ignorance did not apply to leucocytes that were *not* "being hurried along in the blood current." However, nowhere else in Foster's Text-book can I find any suggestion as to the functions of these cells, and I am forced to regard the statement as containing all his views in the matter. The concluding sentence quoted is apparently intended to convey two alternative suggestions—namely, that the destiny of the white cell is either to be broken up or to pass into the tissues. It seems on the face of it highly improbable that there exists in the body a tissue whose *function* is to be broken up. Death usually does not begin till function ends. However, Foster presses the matter further, and refers to the probability that it is by the death and splitting up of white blood-cells that the fibrin factors are set free in shed blood. He then offers the speculation that by a precisely similar process fibrin factors are habitually discharged into normal circulating blood, the white cells being then broken up to provide food for the tissues. It certainly would be a satisfaction if we could turn to useful account some of the results that have been obtained through so much toil and controversy in the investigation of the phenomena exhibited by shed blood in coagulation. The speculation Professor Foster offers is clearly an effort in this direction. But the speculation has the striking objection that the only function it provides for the white cells is a post-mortem one. During life it seems they have nothing to do but, like sheep in a pasture, to fatten and await the appointed hour of slaughter. We are to believe that Nature is at pains to create these cells and endow them with the precious energy called life, not with a view to making use of that energy, but simply with the object of using their dead frames when the energy has gone out of them. Food has got to be supplied to them during the term of their existence, and its potentialities dissipated as so much absolute waste. It is far from being denied here that, after the white cells have lived their life and done their work, portions of their worn-out carcases may be reutilised in the body as nutriment. That all cells are liable to a similar fate is, indeed, part of the conception afterwards to be unfolded. But it is hard to believe that Nature, the economiser, would create any cell for that purpose alone. However, it is not for man to dictate limitations to her, so let us ask the question, Is there any proof that the white cells are specially charged with this post-mortem function? Not a shadow of proof. Professor Foster himself makes the admission that the most careful examinations have failed to show that fibrin, or the essential fibrin factors, are normally present in circulating blood. Their presence, though it would be no proof of the theory under discussion, would at least be consistent with it. Their absence absolutely negatives it, unless we make the unwarranted assumption (as Foster suggests) that these substances, as fast as they are freed, are made away with in some mysterious fashion. We do indeed, by the help of the word "intra-molecular," endeavour to understand how the tissues hide away oxygen for use at leisure in the process of respiration. Here, however, we have good reason for the conception. But we should not, in the absence of the very strongest evidence, be justified in supposing that such complicated molecules as that of fibrinogen are in the same fashion habitually hidden away in circulating blood. Much less should we be justified in resorting to such a conception because a highly improbable and absolutely unsupported theory requires it.

There is no course but to reject the first of Professor Foster's suggestions with regard to the functions of leucocytes (in their character of white blood-corpuscles). Let us turn, then, to the second. But this is not a suggestion as to function at all, for it amounts to no more than the statement that white blood-cells become errant leucocytes. In the pursuit of the matter the Professor contents himself with just referring to the migration and aggregation of leucocytes in inflamed areas, and so leaves it. Whether some useful end may not be aimed at by this very migration and aggregation is a question which he might have asked himself with a view to generalising from the answer as to the usefulness of leucocytes at all times. It is a question which has been debated by pathologists, and many think satisfactorily answered. But it does not seem to have occurred to anyone that in that answer, if correct, must lie the secret of the habitual functions of leucocytes. Pathological phenomena are merely illustrations of physiological truths. A physiologist applies an irritant to the cut end of the vagus nerve in a rabbit, and, getting a certain result, deduces conclusions as to the function of that nerve. It is merely a case of altering the conditions under which a function is performed, and getting, in consequence, an exaggerated manifestation of the function. The process of inflammation is just such a simple experiment. What happens is this. An area of

tissue sustains damage. Thereafter white cells coming into the damaged area, in possession of all the powers proper to them and thinking only of their duties, begin to behave in a striking and noteworthy manner. Evidently this is in response to an alteration caused by the injury of the surrounding conditions into which the white cells enter. Do they leave their proper functions and engage themselves in a manner new to them? No more than, in the physiological experiment just mentioned, those ganglia in which the vagus nerve ends act in an altogether new fashion when the condition transmitted through the vagus suddenly alters. In both, I apprehend, there is produced an exaggerated manifestation of normal function. Every cell knows its own work and no other. It occupies itself with this all its life, and, slave to its conditions, accomplishes it with more or less success as these conditions vary. It is like an "automatic" musical instrument with one tune, whose governing conditions are transmitted, let us say, through a handle. The tune may be variously modified through alteration of those conditions, but as long as the instrument can work it will produce that tune and no other. The cells of a tissue perform the only tune they know in a manner varying as the governing conditions vary. If those conditions suddenly allow (or compel) them to perform with more energy than usual, then is an opportunity for us to detect what before may have escaped our observation; then is the time to record their tune, so to speak; and when conditions revert to the normal, we may know that the same tune is in performance, though haply inaudible. White blood-cells entering a damaged area forthwith exhibit remarkable activity. The fair inference is, that in that area some condition of restraint has been removed or some necessary condition more freely supplied enabling them to carry on their functions with unwonted vigour. If it can be determined what precise work the leucocytes accomplish, or at all events aim at, in inflammation, I shall venture, on the grounds above given, to deduce from this particular instance conclusions as to the general uses of leucocytes in the economy.

Views of inflammation take one of two tendencies. One is, to regard it as an effort of repair directed against the effects of an injury (including in the word injury whatever morbid cause is competent to evoke inflammation). The other is to regard it as a true effect of injury, requiring to have measures of repair directed against itself rather than having a beneficial tendency. The latter view aims at as purely physical an explanation as possible. But undoubtedly every vital phenomenon is a physical consequence of certain material being placed under certain conditions, and to demonstrate the physical *rationale* is not to come to the end of the matter. For every vital process in the body has an aspect which is not physical but purposive, and the object aimed at throughout is the conservation of the organism. The success with which this object is attained is the criterion of health, and in any disease whatever I believe we may see the same efforts towards the same end, however futile. That inflammation is a sequence to injury inevitable and explicable on physical grounds is quite consistent with its being a physiological effort of repair. A physical mechanism underlies all the functions that make up the economy, and the astonishing thing is that so marvellously is the mechanism of the body balanced that any derangement whatever entails by still physical mechanism compensative consequences. So, though it be right to refer the phenomena of inflammation to a "molecular change" in the wall of the bloodvessels, it is equally right to regard the process as a function responding to a need left by injury. What that need is and how inflammation copes with it are suggested in the following passage, taken from Charles Hilton Fagge's Text-book of Medicine: "It seems to me that when a part is injured, the removal of damaged tissue elements is an essential preliminary to the work of reconstruction and repair. I have for years past ventured to teach that the emigration of leucocytes in inflammation serves this especial purpose of clearing away such portions of injured structure as are no longer fit to remain. Leucocytes have been seen to take up granules of vermilion, milk globules, and particles of myelin when these substances have been placed in their way. May we not assume that they can also remove damaged cells or fibres?" That they not only can but do effect such removal is proved by the fact that the separation of sloughs is effected by their agency or that of their immediate products, which eat through the slough's attachments, and substitute themselves instead. Fagge, in adducing this fact, shows that it was observed forty years ago by Professor Goodsir. We cannot deny inflammation the merit of serving a useful function in this case. The need is obvious, and migrated leucocytes undoubtedly cope with it. Surely this is but a magnified example of a function inflammation is designed always to perform. Suppose, instead of a visible mass, just a few cells are rendered useless beyond recovery. Is it not extremely probable that the separation of irreparably damaged cells from the reparably damaged cells to which they are connected is as essential for local recovery as is the separation of an obvious slough for restoration of the part to which it is connected? And if it be so, one does not see how the separation is to be effected either by the damaged cells themselves or by their less damaged neighbours. On the other hand, it is easily seen how the separation may be effected by the aggregation of leucocytes in the part, for the properties of these cells are just such as to qualify them for the duty. It is a matter of observation that leucocytes seize upon all material that submits itself, flowing round inert particles in the manner of an amœba, carrying them off, and subjecting them to a process of intra-cellular digestion, or depositing them in a new situation. This rapacity has earned for them the name "phagocytes." Again, there is a fact which Fagge mentions—namely, that infiltration of leucocytes has always for its concomitant the disappearance of material that occupied the situation before their ingress. The material is said to be "absorbed," but the expression is, in this case and many others, only a vague equivalent for "taken up by leucocytes." This is certainly what it means in the connexion about to be referred to.

(To be continued.)

REMARKS ON THE MAYBRICK TRIAL.

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MANY questions of interest were raised at the Maybrick trial; space will allow only two or three to be discussed here.

Mr. James Maybrick, a cotton merchant, aged fifty, died on May 11th, 1889, after two short illnesses, the cause of his death, in the opinion of Dr. Humphreys and myself, who attended him, being arsenical poisoning. His wife, a young, highly-educated, and fascinating woman, was charged with murdering him, and, after a trial lasting seven days, was convicted and sentenced to death on Aug. 11th, the sentence being ultimately commuted to penal servitude for life. "What were the symptoms displayed by the deceased which caused you to come to this conclusion?"—i.e., of death from irritant poisoning, most probably arsenic—was a question asked me by the coroner. My reply was: "Very urgent and continued vomiting, diarrhœa, straining, incessant thirst, a sensation as of choking, gradual failure of the circulation, as shown by the white hand, followed by rapid sinking and early death."

I saw Mr. Maybrick for the first time on May 7th. The vomiting, which had been so excessive that for an entire day not even a drop of water could be retained, was then passing away and diarrhœa commencing; urination was free; the throat was red, dry, and glazed; there was an incessant attempt to hawk up an imaginary hair; thirst was intense; the tongue was furred; and, though the breath was quite sweet, the patient complained (to use his own words) that his mouth was "as foul as a midden"; there was also great restlessness. Such were the positive symptoms. Negatively, there was neither cramp, conjunctivitis, nor pain in the stomach or abdomen. Beyond the gastritis there was no evidence of disease.

Further facts stated to me were that the digestion had been first seriously disturbed on April 27th, on his dining at a friend's house after attending the Wirral races; that after a few days' treatment he was well enough to go to his place of business, but not well enough to resume his ordinary food, a midday meal prescribed by Dr. Humphreys being sent to him from his home and warmed at his office; that on

Friday, May 3rd, this food, from having, as he thought, been made with inferior sherry, had reinduced the gastric disorder. That was all. I did not know until much later that Mr. Maybrick had vomited on the *morning* of the races, and that he had attributed this vomiting to an overdose of some aperient medicine. We decided that his illness had been originally caused by *some* irritant food or drink. *What* we could not tell: but we did not suspect intentional poisoning. The first serious question is, whether we ought to have done so on that evidence. I think not. Husband and wife were apparently on affectionate terms with each other. The illness originally commenced, as was believed, away from home, and the symptoms seemed capable of an innocent interpretation. On the 9th I saw him again. His condition was practically the same, with the addition of tenesmus, which had been very bad all night. On the 10th, though he expressed himself as being almost well, the pulse had risen from about 84 to 108, and his right hand was white to the knuckles. On the morning of the 11th he was delirious, and in the evening he died.

I was told for the first time on the 9th that in the middle of April Mr. Maybrick had been able to eat any ordinary food during a visit to his brother's house; that he soon became sick on returning home; that this contrast had been the subject of remark and had been noticed before; that there had been a most serious estrangement between husband and wife; that the wife was known to have been unfaithful; and that just before the illness she had procured many fly-papers. We did not at once take these statements for granted; we tested them very carefully. But while still shrinking from the terrible conclusion that the murder of a husband by his wife was being attempted, we could not help feeling that, if what was stated to us was true, much that had been obscure might be cleared up, and that it was at least our duty to be very vigilant and to surround the patient with efficient safeguards. On this day some Neave's food was examined by me, and found to be pure. On the 10th something was introduced by Mrs. Maybrick into Valentine's beef juice, intended for, but not taken by, her husband; and on the 11th, the day of his death, this was proved to be arsenic. On the evidence thus far obtained a certificate of the cause of death was refused, and Mrs. Maybrick was arrested. One by one additional facts came to light, and ultimately the case stood thus: A gentleman of fairly good general health became suddenly ill on two very definite occasions. Each time he attributed his illness to something that he had taken: the first time, to an overdose of medicine; the second, to some badly prepared food. A few drops of the medicine left in the bottom of the bottle, and a thin scale of the food dried on to a washed-out jug, were found on analysis to contain arsenic. The food was sent to him by his wife; the bottle was accessible to her; similar bottles found at his office were free from arsenic; his wife had expressed her loathing of him, and had very strong reasons for wishing him out of the way; she was known to have prepared an arsenical solution; she was known also to have actually put arsenic into food intended for him; the symptoms and the post-mortem appearances were believed *by all who witnessed them* to be those of an irritant poison; and arsenic was found in his liver, intestines, and kidneys in such amount as to warrant Dr. Stevenson in the belief that the whole body contained nearly a fatal dose at the time of death.

To meet the above serious facts and inference it was alleged by the defence that the symptoms were *not* those of arsenical poisoning, but actually pointed away from it; that the post-mortem appearances strengthened this conclusion; that the patient had been in the habit of taking arsenic, and that what was found in his body might have been a portion of a long antecedent dose; and, lastly, that what was found in his food might possibly have come from a glaze in the pan, though Mr. Davies had boiled distilled water in a similar pan without getting a trace. There was no explanation of how the arsenic got into his medicine, and Mrs. Maybrick herself explained its presence in the beef juice.

The symptoms were in some respects anomalous, and in one respect—the lateness of the onset of diarrhœa—markedly so. Around this question of anomaly an interesting discussion arose. If anomalies are much commoner in arsenical than in other kinds of poisoning, and if in any given case the symptoms are like those caused by arsenic, then the fact of there being anomalies will rather strengthen than weaken the presumption that arsenic did, in fact, cause them. That anomalies *are* common in arsenical poisoning was admitted on both sides. The difference was that Dr. Stevenson did, and Dr. Tidy did not, consider them commoner than in other cases of poison compared with the actual number of such cases, or, as Dr. Tidy stated, "there are infinitely greater numbers of cases of arsenical poisoning than any other, and the result is that the anomalies become more apparent in the case of arsenical poisoning than in any other."

But is this so? The only way of determining it is by an appeal to facts, and no facts in support of the statement were offered at the trial. I had collected for use in court, if required, all the cases of poisoning that had occurred at the Royal Southern Hospital during my nineteen years' tenure of office as physician. They are 102, and not one of them was from arsenic. A similar collection from the reports of *many* institutions would help to settle this question one way or the other. But there is another method. From the number of deaths from arsenical poisoning as recorded by the Registrar-General we can infer the number of cases, as we do in deaths from disease. From the five last published volumes (from 1883 to 1887 inclusive) I have collated the deaths from the commoner poisons in England and Wales during those years. They are as follows: opium, 646; lead, 438; carbolic acid, 332; prussic acid, 132; oxalic acid, 120; strychnine, 106 (and vermin-killer, 59); hydrochloric acid, 90; cyanide of potassium, 74; phosphorus and lucifer matches, 71; alcohol, 66; chloral, 52; arsenic, 51; sulphuric acid, 49; ammonia, 45; nitric acid, 29; salts of mercury, 26. This does not support the statement that "there are infinitely greater numbers of cases of arsenical poisoning than any other."

One of the anomalies was the late onset of diarrhœa. A preliminary remark must be made here. Diarrhœa, as I stated at the trial, had certainly begun on the 7th. This symptom was mentioned to me on that day. I asked to see a motion, and Dr. Humphreys and I went to the bathroom for the sole purpose of seeing a large loose one which had been retained for examination. (We had examined the urine in the bedroom, and had been told that no vomited matter had been saved.) Not only, therefore, was the onset of diarrhœa, though admittedly late, earlier than the defence alleged, but tenesmus *followed*, and did not, as was also alleged, *precede* it. It is as well to remember here also that the patient had had no food whatever on the 4th, and very little on the 5th and 6th, and that directly the stomach became able to retain more food, diarrhœa, though never an urgent symptom, was more marked.

Can any reasonable explanation of this late appearance of diarrhœa, other than the empty intestine, be suggested? A remark made by Orfila and Tardieu in their official report on the death of the Duc de Praslin is worth reproducing here: "L'un de nous a démontré, par des expériences récentes, qu'à l'aide de faibles doses d'un composé opiacé, on parvient à diminuer les vomissements et à en retarder l'apparition, à rendre les douleurs moins aiguës et à prolonger la vie." Now it is a very striking fact that one of the first things done by Dr. Humphreys on the 28th was to introduce a morphia suppository. This was done to allay pain, but one of its effects would be to delay diarrhœa. Again, on the night of May 8th, when called up on account of the tenesmus, he ordered an opium suppository. "Why was not this urged at the trial?" may be asked. I do not know. All I know is that I drew attention to what I believed to be its importance.

Another anomaly was the slightness of the abdominal pain. Had the morphia and opium no effect in causing this? It at any rate was one of the effects (delayed diarrhœa being another) which Orfila and Tardieu say that they produced by giving opium; and as opium was given here, unless we are to suppose that it produced no effect at all, the natural inference is that it produced the effect which it was likely to produce, and which experience had shown that it did produce. It is not certainly known in what form the arsenic was administered, but most likely it was in solution. If so, this also would modify the symptoms. A strong reason for thinking that a solution of arsenic was originally used was that a solution was certainly introduced into the beef juice which was meant to be given.

Another interesting point raised was as to how long after a serious dose of arsenic had been taken it could be easily

found in the urine. The following question was put by Sir C. Russell to Mr. Paul: "Taking Dr. Humphreys' account of what he did—that he put the urine over the flame of a lamp for two minutes until he brought it to the boiling point,—I want to ask you whether, if a serious, a fatal, dose had been administered within, I would say, a fortnight of that time, there must, in your judgment, have been a deposit shown upon the copper?" Answer: "There must, in my judgment." Then, that there might be no mistake about what was meant, Sir Charles added: "I mean taking the test which Dr. Humphreys described that he imperfectly made?" "Yes." Cases bearing upon this point, where the analysis has been made by competent men, should therefore be valuable. The Duc de Praslin took a fatal dose of powdered arsenic on Aug. 18th, and died at 4.35 P.M. on the 24th of the same month. The urine passed in the night of the 21st contained a little arsenic; that passed on the 24th, none. The analysts were Chevallier, Orfila, and Tardieu; and, commenting on the absence of arsenic on the 24th, the two latter remark: "Nous devons dire que ce résultat négatif n'a rien qui doive surprendre. L'un de nous a signalé depuis longtemps ce fait, à savoir: que l'on peut trouver de l'arsenic dans l'urine à telle époque de l'empoisonnement et ne pas en déceler plus tard." The circumstances surrounding the Duc de Praslin's case, and especially the closeness with which it was watched and reported on several times daily, give great value to the recorded facts, and it is remarkable how many resemblances there are between them and those of Mr. Maybrick's illness. The Duke took poison in the afternoon or evening of the 18th. Vomiting commenced about 10 P.M. on the same day. On the 19th, on leaving a bath, there was one involuntary evacuation of the bowels. On the 20th there was no action, and no pain in the abdomen either with or without pressure, but the extremities were very cold. On the 21st, at 5 A.M., there was still no abdominal pain, no vomiting or retching, very urgent thirst, and the pulse was 80 to 85. In the evening the abdomen was distended and a little painful; no vomiting; no stool; constriction of throat severe. On the 22nd there was neither nausea nor vomiting; there were two stools *following enemata;* abdomen distended and painful to the touch; burning from throat to anus. In the night fainting occurred, and there was complete insomnia. On the 23rd the symptoms were intensified; no stools; no urine. On the 24th death took place at 4.35 P.M. The lateness of the abdominal pain, the late onset and, with the exception of the motion after the bath, very moderate character of the diarrhœa, the absence of cramps and of conjunctivitis, the sleeplessness, the coldness of the extremities, and the long interval between the fatal dose and death, are curiously similar in the two cases. The Duc de Praslin lived six days; Mr. Maybrick eight.

Liverpool.

A CONTRIBUTION TO THE

MORPHOLOGY OF THE SACCHAROMYCETE OF DIABETIC URINE.

BY J. BARKER SMITH, L.R.C.P.

THE case of diabetes which furnished the study of this saccharomycete terminated fatally after a few years, and was that of a young Jewess. The specific gravity of the urine and the percentage of sugar were fairly constant throughout, the former approximating to 1044, the latter to 4½ per cent. It was the appearance of some fusiform particles in the urine under the microscope, these slightly undulated and with a double contour, that invited an investigation which was continued over two years. I conjectured that they might have passed through the epithelium of the kidneys,[1] but it was not until I had grown aerial forms that their history became apparent, and that they were recognised as the broken segments of mother cells or spores, which differed, again, from those afterwards grown by me in not losing their double contour by immersion.

Four phases in the morphology of this saccharomycete may be mentioned:—(*a*) *Torula phase:* Settling like heavy yeast on the bottom of the vessel containing the urine, the aceto-amide reaction with iron increasing; during this period the fungus might be mistaken for a micrococcus or micrococcous form of bacterium ureæ, &c. (*b*) *Mould phase:* Throwing up hyphæ above the surface of the urine or culture solution, the hyphæ being first white, then yellowish or brown, or, under certain conditions of light and culture, pitchy black. (*c*) *Differential phase:* Resting on the bottom of the vessel for several weeks under starved conditions, the vessel containing water only. Both clavate and globular terminal cells may be observed, from which escape smaller round cells without nuclei, but with a few pinkish cells between them. Barrel cells are also present, apparently formed by conjugation. (*d*) *Aspergillus phase:* Growing well on moistened bread, forming a dark greenish grey or canescent patch, which becomes bluish olive green when treated with spirit or ether. This phase is interesting because it is an example of one of the facts which enable us to conclude that the physiology of the larger fungi is somewhat explanatory of that of the smaller. The aspergillus form, for instance, may be traced to a lower or micrococcous form, whilst its extracts exhibit some of the constituents of the larger fungi. This analogy I purpose treating more at length in a future paper; there are numerous interesting developments connected with the simple facts here stated.

The urine evaporated gave a gummy opaque mass, surrounded by crystalline granules of modified uric acid. The ethereal extract recovered by spirit and diluted with water exhibited in a few days hyphæ growing above the solution. A sample of urine acidulated with hydrochloric acid and agitated with ether afforded two layers, the upper one clear and the lower one turbid. The clear layer gave a semi-crystalline extract, containing two organic forms, one subspherical and the other fusiform (débris of mother cells). The turbid layer gave a clear gummy extract, surrounded by crystalline granules and containing three sorts of organic forms, round complete cells, and débris of incomplete cells. The fungus was grown in various solutions, and the cells were found to differ in size according to the culture solution, whilst their shape varied according to position in or out of the culture solution. None of the forms, however, differed so widely as to be indistinguishable. The most constant characters of the aspergillus forms of the fungus are the macroscopic appearance of the patch, the branched hyphæ supporting the spores, terminal hyphæ with constrictions supporting two terminal subspherical spores from a well-marked node or constriction (similar to the basidospores with sterigmata of the larger fungi), submoniliform appearance of other terminal hyphæ, and the double contour of the spores themselves, which contour is immediately lost on immersion in fluid. The spores become very small when grown in citric acid solution, remaining distinct, however, from the common aspergillus of lemons, which sometimes resembles a starved mucor. They grow in a 2 per cent. phosphate of ammonia solution with a somewhat larger percentage of citric acid; also in similar salts with glycerine, sugar, &c.; the mould form eventually becoming yellowish-brown, the brown or even blackish colour not being apparently distinct from the yellow except by quantity or condensation. In this form perhaps only a single central nucleus will be found, the pinkish nucleus becoming clear or of a steely-blue colour on altering the focus, whereas the aspergillus forms often exhibit in their spores two to four nuclei. Bread forms a good culture-bed for these aspergillus forms; they may be kept six months or longer in a chip-box, the spores retaining their vitality—e.g., examination of spores—after six months. Dry: Cells somewhat smaller than a blood-corpuscle; cell wall dark in colour and well marked, an outer halo and an inner pinkish one under altered focus; some with hyaline centres; others containing from three to four rose-coloured nuclei; others, again, with bluish granular contents. Moist: The somewhat oval spores become round; the double contour of the cell wall disappears and becomes evident as a dark line; pinkish nuclei become motile and are extruded as spores; cell contents become larger, but remain clear and homogenous.

[1] Vide supplement relating to oxalates.

SUPPLEMENT TO THE PAPER ON THE FUNGUS OF DIABETIC URINE.

In the study of the fungus of diabetes four phases in the life history of the same plant were selected. In studying other fungi than the schizomycetes, we may select these phases as types, leaving, however, the morphological history of the different fungi incomplete, and not confusing the term *micrococcous* form with micrococcus.

Torula type.—Examples may be found in the mucus from the evacuations of children suffering from autumnal catarrhal diarrhœa, in which there is a history of cold meat or some article of diet taken twelve hours before. Cells in various stages of development are found, and may be traced through several phases to the more complete endogenous mother cell, whose walls are breaking away to afford exit to the four complete daughter cells. At this moment the endogenous mother cell somewhat resembles those compact cells of four in a group found in myxœdemic and gonorrhœic urines, &c. The micrococcous form of this type is well illustrated by the mucous membranes, or even epidermis, of the gouty and the rheumatic, in their secretions and excretions, or even in the well water contaminated thereby; also by the small pink nuclei from the uvula and fauces, especially before a case of tonsillitis. In a similar way, I am persuaded, may be found in syphilis, recent or remote, those streptococcus germs like small definite specks, under a fifth of an inch, which are supposed to cause it—i.e., not only in the blood about a chancre, but also in the ventricose hair from a patch of syphilitic psoriasis, or, again, in the urine. The urine of gouty and rheumatic patients submitted to cultivation affords a variety of forms which refuse for months to grow in solutions of urea unless sugar is added, whilst growing freely in solutions of uric acid; some of these are often greenish in colour. With rheumatism and gout in view, some early experiences of mine as a fungus eater more than twelve years ago may be mentioned. I had with a companion partaken of fungus (Coprinus atramentarius) at breakfast every day for a week, when I awoke one morning with pain in my right ilium, and later on in the ankles and soles of the feet, which rendered locomotion painful; my ankles were weak, and I was nearly crippled; getting well after taking iron and discontinuing the fungus. My companion after a few days experienced the same symptoms. The experiment was again repeated in both cases, with the same result. Moreover, one of my patients had been a sufferer from apparently rheumatic pains in the calves of the legs, and was always benefited by a short course of iron. Finding he was in the habit of eating uncooked mushrooms, I advised him to discontinue his habit; he did so, and lost his pain, which he had had at irregular intervals for years, and he has remained free from them ever since. Another interesting one-celled fungus was found in the bile-stained urine of a jaundiced patient who had pain under the right scapula, and whose symptoms came on after exposure in a damp meadow in autumn. Its distinctive characters were its bright halo, apparently with ciliæ, its motility, and its small oblong pink nucleus. I think I have seen the same fungus emerging from one of the desmids, and in some cases of pneumonia in children.

I shall not attempt to illustrate the *mould* type, though I suspect some of the forms found in rheumatism and gout would enable me to do so; I will therefore pass on to those resembling aspergillus.

Aspergillus type.—In many cases where there is an aspergillus growing on the ceiling in a corner of a bedroom the inmates will exhibit various forms of irritation referable to the mucous membrane and the skin. Such are conjunctivitis, laryngeal irritation, bronchial catarrh, bladder irritability, and itching papules of the skin, often persisting for months, and especially coming on after measles; troubles of the external ear, and even attacks of epilepsy; also ringworm. A microscopical examination from the different parts affected will confirm the analogy with the aspergillus of damp paper, although we may be left with a suspicion, which is strengthened by our study of the diabetic saccharomycete, that we have in the spores of what we pass as those of bacterium ureæ possibly those of an aspergillus living under other circumstances of growth. Certainly I have sought oxalates in the aspergillus hitherto unsuccessfully; they are found in mucor, as a possible cause of the irritations of mucous membranes in such cases, which often resemble the respiratory dyspnœa and bladder irritation associated with oxalates, but I have not proved that the aspergillus contains them in any form. Of this, however, I am assured: that the larger fungi are explanatory of the smaller fungi, in physiology and in chemical constitution—e.g., the constant occurrence of tyrosine-like crystals, easily extracted by spirit, and cramming the spores of the larger fungi, &c. In poisoning by some of the larger fungi (apart from irritant resins of the russulas or the muscarin of the amanitæ) there is also much to remind one of oxalic acid and cholera. Oxalates do occur in the fungi, not only outside the hyphæ but inside; I attribute the poisonous nature of the puff-ball to this fact as much as to the ripening of the spores, for at the time when this fungus becomes yellow and poisonous, crystals of calcic oxalate crowd the hyphæ. Some of these points were mentioned by me in a letter published in THE LANCET of Aug. 30th, 1884.

An interesting case which has lately come under my care has increased my interest in oxalates, and made me consider another mode of their origin in the body in addition to idiopathic formation and ingress by the alimentary canal—viz., by the lungs,—and this, perhaps, not always wholly immediately, but indirectly through the agency of micrococcous forms. Such an experience is probably unrecorded, as the process known as the platinum process has only lately been in use, and my patient was engaged in working the process as an elegant addition to photographic art. He complained of a cough which he had had for six months, and spat blood for about two months before. He was anæmic, and complained of *general weakness, pain in the back*, and over the region of the heart. His temper was irritable. Sometimes he was absent in mind or self-conscious. He had sensations of heat in his head, slight giddiness, and flushing of cheeks frequently. There was no sweating at night or loss of flesh. Physical examination revealed no signs of phthisis; his heart beat irregularly and feebly, and there was a hæmic murmur. The sputa were loaded with small fungus cells, but contained no bacilli. The urine contained abundant minute crystals of calcic oxalate. He had conjunctivitis, which he had also noticed in his fellow-workers. On visiting his dark chamber, brilliant crystals of potassic oxalate glittered like small diamonds everywhere—on the floor, shelf, and bottles. The potassic oxalate is used in the process in hot saturated solution. It may be mentioned that Nägeli found that no fungus grew in oxalate of ammonia and oxalic acid except on the addition of sugar.

Dulwich.

THE HISTORY AND USE OF ANÆSTHETICS IN MIDWIFERY.

BY FRED. W. ALLWRIGHT, M.D., L.R.C.S.I.

(Concluded from p. 1242, vol. i. 1889.)

Chloroform: its mode of administration.—A good remedy will fail in its effects if not properly administered. This truism especially applies to anæsthetics, even in surgical practice, while in obstetrics care and skill are essential to the successful use of them, and out of all proportion to the attention bestowed upon the subject in the text-books. No one can be a good administrator of an agent so powerful as chloroform without a careful study of the chemical, physical, and vital principles concerned. A few of these should be clearly understood. As to the exact nature of the changes which it effects in the cells of the nervous centre it is needless to inquire. It is sufficient to know that the effect is by a direct action upon these cells, according to all authorities, and that the chemical theory of former times, which referred the action to suspended oxygenation of the blood, has been abandoned. Neither is artificial anæsthesia cerebral anæmia, although this state accompanies it. Chloroform belongs to that class of poisons which have an elective action upon the nervous system, selecting certain parts and leaving others alone. A special affinity to the nervous system is shown by the preponderating amount found in it; thus, when the amount in the blood is 1 part, there will be in the brain 3·25 and of chloroform 3·92 parts. The rapidity of the action of chloroform is an important fact. Entering the system through the pulmonary circulation, it passes directly with the blood currents to the nervous centres. In like manner, and with the same rapid action, the system clears itself, and cessation of administration ensures speedy cessation of effect. The fact enforces attention to the importance of intermittence of the inhalation. Paul Bert found that dogs in a mixture of air and chloroform vapour, which required an hour to produce insensibility, invariably died at the end of seven hours. Intermitting administration could be continued indefinitely

with safety.[1] The residual air of respiration should also be held in mind by the administrator of chloroform. The cumulative action of this agent, of which a great deal was formerly said, is only the additional effect of the amount of vapour contained in this air; in other words, the effect of chloroform will continue to be progressive after the influx of vapour by the tidal current of respiration has been stopped, until all that is in the air of the lungs and bronchial tubes has passed into the blood. The vapour of all anæsthetic agents is heavier than air, and this fact has an important bearing upon the position of the mouth and nose of the patient in relation to the surface from which it is inhaled. Temperature has a powerful influence upon the amount of vapour which the air will carry. With a change in the thermometer of 20° the amount of chloroform vapour doubles. The record of chloroform accidents shows many cases plainly due to the sudden inspiration of air heavily charged with the vapour. Essential requisites of any apparatus or plan for the safe administration of chloroform are that it shall ensure a thorough admixture of air with the vapour, also give the power of graduating the process and limiting the dose. Nature has prepared an instrument which fully meets these demands. It is a hollow or cup-shaped sponge. This article, dipped in warm water, and squeezed out, is unequalled in convenience and efficacy. It is soft and pliable; it is so porous that the supply of air cannot be shut off; if pressed together after chloroform has been sprinkled on it, every little interstice, as it gives passage to air, yields to that air its modicum of vapour. The only device at all comparable with it is Esmarch's mask, and that is not so readily carried. An essential adjunct to this sponge is a bottle which will only permit the escape of the liquid by drops. A perfume-bottle with a screw-cap tube is the best, or an ordinary perforated cork will answer the purpose. Provided with these, the administrator has perfect command over the rate of administration; while the mode almost universally recommended of pouring chloroform upon a handkerchief or napkin is faulty in the extreme; it is not only faulty, but dangerous. This is not a matter of opinion, but of facts of physics. The current of inspiration can never be equably charged with the vapour of a liquid which is poured on a cloth in patches, so that it does not pass through, but only over, the moistened surface. The patient cannot fail to get at one breath air only slightly charged with the vapour, and at another that containing a dangerous amount. There can be no doubt that many practitioners have given up the use of chloroform in obstetrics from neglect of attention to these minute points. After sprinkling a few drops of the liquid on the sponge and squeezing it together, it is applied to the patient's nose and mouth. If coughing is excited, the vapour is altogether too strong. If the pains lessen in force or cease, a few words of encouragement and little delay, and recommencement with a very small dose, will generally obviate the difficulty. When the patient shows that she is passing under the influence by expressions of relief, the sponge is withdrawn, replenished, and held closed in a folded towel to prevent evaporation. The patient will indicate, if told to do so, when a pain is approaching; then two or three deep inspirations will anticipate the suffering. The object is to keep her in the first stage of anæsthesia of authorities. There are three by Sansom: (1) sopor, (2) stupor, and (3) stertor. Campbell divides this first stage, again, into three: (1) an initial stage of amelioration, (2) incomplete analgesia, and (3) complete analgesia. But the different degrees of narcotism glide insensibly into each other. The respiration of the patient and the appearance of her countenance indicate her condition. In obstetric analgesia, and with a small amount poured on the sponge, there is no need to watch the pulse. After the patient has ceased to make voluntary remarks, a question will enable the administrator to judge of the extent of the influence by the readiness and coherency of the answer. A better description of this process has never been given than that by Channing: "The object in ordinary midwifery practice or in the severer form of labour pains in the use of etherisation[2] is to diminish suffering. There is much of this pain which is tolerated readily, and from this the patient does not demand relief from extraordinary agents. So true is this in practice that cases daily occur in which etherisation is induced, and in which the patient determines exactly its extent. In the intervals of uterine contractions the instrument is removed by the patient or by her direction given in some way, and which is at once understood. She knows when the pain is coming, and demands the inhaler. She graduates, so to speak, the supply exactly by the demand; and in this way is presented to the observation of the practitioner one of the most important and interesting agencies in operation for relieving suffering, sometimes agony, which he ever notices." As the head distends the vulva, the effect of chloroform is carried more deeply to meet the acuter suffering of this stage. Full surgical anæsthesia may be required, and is often necessary as an efficient aid in delivery of the head without injury to the perineum. The head being delivered, the administration should cease. The length of time during which the inhalation of chloroform may be continued would be difficult to determine. Paul Bert's experiments have indicated its harmlessness with small doses and an intermittent administration. In practice, Snow has continued it for thirty-one hours, Simpson fourteen hours, and Protheroe Smith twenty-eight hours. Snow is undoubtedly correct in saying that "the quantity of chloroform given in labour might be continued daily for an indefinite period without appreciable effect on the health."[3] It is evident from the foregoing that the administration of chloroform in labour is no light or easy task. To do it well requires great care, close attention, constant watchfulness, and entails no small amount of extra fatigue. Under chloroform the operation of turning is very much facilitated, and rendered possible in cases which, without it, would be impracticable. Indeed, it was in cases of neglected cross-positions that anæsthetics won their earliest and most brilliant triumphs. The most determined opponents of their use have testified to their benefits in such cases, and experienced accoucheurs have succeeded in turning under chloroform when all previous efforts had failed and every preparation had been made for embryotomy.[4] In seventeen cases of obstructed labour in women who had previously had craniotomy or embryotomy performed, version under chloroform gave nine living children and seven more with heart pulsation.[5] In proceeding to administer chloroform for version the obstetrician should be fully alive to the fact that anæsthesia must be carried very deeply. All voluntary efforts must be rendered impossible; even in the deepest narcosis, as manifested by stertorous breathing, the introduction of the hand will not always fail to excite uterine contractions. An assistant is most desirable in these cases, and should always be obtained if possible. Still, a neglected shoulder presentation at night, many miles from professional assistance, and urgently demanding relief, may present itself to the practitioner at any time. A few directions may aid in meeting the exigencies of the case. See to the placing of such assistants as may be at command, and explain what will be required of them. Place the patient in a proper position across the bed, the hips free of the edge, and take measures for her being kept there. Carry the anæsthetic deeply, and do not commence the operation until there is stertorous, or at least heavy, breathing. In committing the continuance of the administration to the hands of a non-professional person, the drop tube is a valuable resource; directions to vigorously shake the bottle will be necessary in order to get enough of the liquid; an overdose is not easy, and if the patient is on her back the accoucheur can obtain a full view of the face and watch the respiration. The imagination has not been drawn upon for such cases, and experience has taught the dependence of excess upon attention to details.

Indications.—Chloroform being in labour as an analgesic, pain is the indication for its employment. But while there is no labour without pain, it is not every labour that requires chloroform. In muscular women of the lower classes labour causes more effort than suffering. In women of nervous type, whose systems have been enervated by refinement or luxury, the suffering is apt to be acute. In all classes there are happy exceptions, in whom parturition proceeds rapidly, and the pain is not severe enough to tax the nervous system and is well borne. The necessity or advisability of chloroform to facilitate labour must rest with the obstetrician; as a means of relieving pain it should depend upon the patient. There is a general agreement amongst authorities that the proper time to commence administration is when the os is nearly opened and expulsive pains are about to begin. Whether anæsthesia has been needed previously or not, it will most

[1] Annuaire de Thérapeutique, Bouchardat, 1884.
[2] Channing uses the term "etherisation" to denote the effects of chloroform as well as ether.
[3] American Journal of Medical Science, Oct. 1853, p. 526.
[4] Hall Davis: Transactions of the London Obstetrical Society, p. 137.
[5] Kidd: Medical Times and Gazette, July 4th, 1863.

likely be demanded now. The most painful period of labour is when the head distends to the utmost and clears the two existing circles of soft parts, the os and the vulva. During that part of the process in which the head is moulded to the bony canal, which sometimes requires many pains, anæsthetic effect is not so much needed, and chloroform may often be dispensed with. The stretching of soft parts, however, is often most agonising, and at the vulva relief is most urgently called for. With entire unconsciousness and complete acinesia, not only is acute suffering saved, but delivery of the head is effected with less danger to the integrity of the perineum than under any other circumstance.

Contra-indications.—It may be stated in general terms that no contra-indications exist to the administration of chloroform in labour when the severity of the pains demand it. Diseases of the vital organs and some special conditions, however, demand careful consideration.

Chloral.—The physiological effects of chloral are strikingly similar to those of chloroform. Locally it is an active irritant, in strong solutions vesicant, or even escharotic. It is also decidedly antiseptic taken internally. Its first effect is a local one upon the stomach; then follows a stage of exhilaration similar to that caused by alcohol; after this comes sleep, and then narcotism. Its action may be divided into three periods: (1) excitement; (2) hypnotism; (3) stupor. Preceding or attending the second and third stages, it exerts a decided anæsthetic action, very much diminishing any pain which may be present, but scarcely ever abolishing it. Chloral also causes marked muscular relaxation, reduces the temperature, and enfeebles the contractions of the heart. It is introduced into the system through the primæ viæ, differing in this respect from chloroform, and differing from that agent also in its effect upon the conjunctiva, producing insensibility of that membrane long before that of the skin is affected—"a unique exception, thus far, in the history of intoxicants." So similar are the physiological effects of chloroform and chloral that Liebreich, the introducer of the latter to therapeutics, formulated a chemical theory of its action, according to which chloral undergoes decomposition in the blood; chloroform is liberated and becomes the efficient agent. This theory has not been accepted. Chloral was introduced to therapeutics in 1869. In the same year it was first used in obstetrics by Simpson, who found that, while the patient was so deeply hypnotised by it as to be only partially aware that labour was going on, the uterus still continued to contract strongly and regularly.[6] In 1874 Dr. Playfair presented the claims of chloral to the profession, and has ever since been a strong advocate of its use. He urged its especial value in women of highly organised nervous type, primiparæ, and in whom dilatation of the os took place slowly and painfully. In such cases dilatation was promoted and relief rendered without the disadvantage of suspending labour, as is the case when morphia is administered. Space will not permit of giving the experience of other authorities, but a careful survey of them upon the use of chloral in labour shows a striking absence of that disagreement as to facts regarding its action which is the case with chloroform. Interference with the process of parturition was no longer a novel thing when chloral came under observation; moreover, the effect of chloral does not vary so widely with the dose, and especially it does not vary so rapidly as with chloroform. Whatever the explanation, there is general unanimity of testimony as to the effect of chloral upon the various elements and processes of parturition. 1. It is a quieter of nervous agitation, a stimulant for mental despondency, a soother of irritability, and a tolerably efficient remedy for hysterical manifestations. 2. Its anæsthetic properties are decided and considerable; nevertheless, it cannot rival chloroform in its absolute power over pain. The sufferings of labour are lessened, but unconscious delivery can scarcely take place. It has not succeeded in establishing itself in surgery as an anæsthetic. 3. The strongest and most abundant testimony is in regard to the influence of chloral in promoting dilatation of the os. It seems specially adapted for cases of thin and rigid os, when the pains are more irritating than effective. 4. Its effect upon uterine contractions is, like chloroform, regulating and tending to restore them to the normal type when they are spasmodic or irregular. In such cases it may seem to increase uterine action; most observers agree that uterine action is not lessened. 5. Muscular relaxation being a pronounced physiological effect of chloral, it would be expected to promote the passage of the head over the perineum; but there is a singular absence of testimony upon this point. The period of labour and the class of cases best adapted to the action of chloral are evident from what has preceded. In giving chloral, its irritating qualities must be kept in mind. Administered by the stomach, it should be well diluted; if by the rectum, in some bland vehicle. Fifteen grains may be given in an ounce of water, and repeated in twenty minutes, and again in forty minutes, if necessary. In repeating the doses of chloral, the fact should be borne in mind that, once given, its action has passed beyond control. In this respect it presents a marked contrast to chloroform, with which cessation of inhalation causes very speedily cessation of effects. Chloral is perfectly safe, however, with reasonable care. The contra-indications to the use of chloral are the existence of diseases of the stomach and heart.

Ether.—The influence of ether upon the duration of labour, upon the uterine contractions, and upon the maternal soft parts is not materially different from that of chloroform; there are, however, certain minor points of difference which deserve consideration, while the mode of administration differs considerably. In regard to the influence of ether upon the duration of labour, one can with this remedy blow both hot and cold. In those cases, especially in primiparæ, in which the patient is exhausted from long effort, so that not only do the abdominal muscles fail to supplement the contractions of the uterus, but the uterine muscle itself grows weak from fatigue, ether, being one of the best diffusible stimulants, will often reawaken with renewed vigour the muscles engaged in the expulsion of the child, so that the administration of this anæsthetic will often obviate the necessity of instrumental delivery. Again, in those cases in which, during the second stage of labour, each expulsive effort causes such pain that the action of the abdominal muscle is inhibited, a mitigation of the suffering by the adminstration of any analgesia will result in the active co-operation of the abdominal muscles, and consequently a more speedy termination of labour. On the other hand, in those women who from excitement and pain are stimulated to a degree of frenzy, in which, regardless of the pain they inflict upon themselves, and deaf to the expostulations of the medical attendant, they summon every atom of muscular force at their command to terminate their intolerable suffering, any anæsthetic will calm the excitement and allow the labour to take a more natural and placid course. But, in any case, ether, like chloroform, if pushed to an extreme degree, will diminish the contractile power of all the muscles, and thus not only retard labour, but predispose to post-partum hæmorrhage.

Method of administration.—After trying the familiar cone and various forms of inhalers, all more or less complicated, it will be found that the most convenient and suitable apparatus is a rather thin towel or napkin, folded once and laid lightly over the patient's nose and mouth. The ether is dropped upon the compress, only by three or four drops at a time, at the close of every expiratory act, directly below the point of the patient's nose. In this way none of the vapour is driven away from the nose and mouth by the expired air, but all of it enters the lungs at the next inspiration, and the individual is in a few seconds irresponsive to the prick of a pin or a pinch. Narcosis being established, it is sufficient to let fall only a drop or two beneath the nose at about every alternate inspiration in order to keep the patient unconscious and insensible. If this course is pursued, there will not be the stertorous breathing, frothing mouth, and deeply congested face only too familiar in many of the surgical clinics where ether is habitually administered. If ether is given as an analgesic to mitigate the labour pains, it should be administered, of course, just as the pains come on, while in the intervals the administration may be discontinued.

Brighton.

[6] Medical Times and Gazette, Jan. 1st, 1870, p. 4.

OPEN SPACES FOR WAKEFIELD.—The Wakefield Paxton Society intend to open recreation grounds in several parts of the city for the use of the public. Much interest is shown in the scheme, and the promoters are receiving generous support. In addition to the ground recently opened by the Society in Pinderfields-road, others have been promised by, respectively, Sir E. Green, M.P. for the city, Miss Edith G. Mackie, daughter of a former member, and by Mrs. Frederick Thompson, of South-parade.

Clinical Notes:

MEDICAL, SURGICAL, OBSTETRICAL, AND THERAPEUTICAL.

THE COCAINE HABIT.

By ARTHUR P. LUFF, M.B., B.Sc. LOND.,
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THE following case of long-continued addiction to the use of cocaine, which lately came under my notice, will probably be of interest to the medical profession.

The patient, a gentleman, consulted me for a feeling of inaptitude for work, mental indecision, occasional palpitation of the heart, and dyspeptic symptoms. I ascertained that three years ago he had been recommended to apply a 5 per cent. solution of the hydrochlorate of cocaine to the nasal mucous membrane to relieve an attack of nasal catarrh, and that he had found the result so pleasurable that he had continued the application on and off for a period of three years, quite irrespective of any catarrh or affection of the mucous membrane of the nose. At no time did he abstain from the use of the cocaine for a longer period than two weeks, and he frequently employed it daily over a period of four or six weeks. As a general rule, he used up four or five grains of cocaine daily in the form of a 5 per cent. solution, although occasionally as much as eight grains were used in a day. The cocaine was always applied with a long nasal brush, the spray never being employed, and the mucous membrane of the nose was the only part to which the application was made. He informed me that at first the use of the cocaine produced some sleeplessness, but that this passed away after employing it for two or three months, and that he drifted into the use of the drug on account of the feeling of freedom from worry and the local and general pleasurable sensations excited by it. The drug exerted no influence upon the sexual functions. During the latter half of the three years of its employment he had noticed a gradually increasing indisposition for work, together with a growing inaptitude for coming to a ready decision with regard to affairs connected with his business and daily life; also a disposition to shun society. He felt that his general health was not so good as formerly, and he had been subject for the last two years to chronic constipation, together with occasional attacks of palpitation of the heart and slight dyspepsia. I pointed out to him the probable connexion of his symptoms with the long-continued employment of cocaine, and strongly advised him to break himself of the habit, ordering him at the same time a simple tonic and to employ abdominal massage with a four-pound cannon-ball for five minutes every morning in order to relieve the constipation. Six weeks later he informed me that he had entirely broken himself of the use of cocaine, although for the first week he suffered from great depression, and had a strong desire to return to it. He had entirely recovered from all his bad symptoms, his mental decision and powers of application to work being thoroughly restored.

Westbourne-terrace, W.

CASE OF HYDATID MOLE.

By JAMES OLIVER, M.D., F.R.S. EDIN.

WELL-RECORDED cases of hydatid mole are sufficiently rare to warrant the publication of one which very recently came under my care at the Hospital for Women.

Annie T——, aged twenty-five, and married seven years, has had five full-time children and no miscarriage. The last child was born two years and four months ago. This child was suckled for sixteen months, and the patient was unwell each month during the first five months of nursing. After the child was five months old she was never again unwell until one month after weaning. The last child was the first which had been suckled by the mother. Menstruation was established at the age of fourteen, and it has usually lasted seven days. On April 22nd she began to lose, and continued to do so until July 10th, losing more or less every day—i.e., for eleven weeks. Prior to April 22nd she had not menstruated for three months, although until then, and after she had weaned the baby, she had been quite regular, and lost as usual. Besides complaining of constant hæmorrhagic discharge, she complained also of pain all over the lower part of the stomach. The pain came on generally at night, after going to bed, though it had occasionally been noted during the day. There was a constant feeling of "soreness of the stomach," such as one experiences after colicky pain. The patient began to lose blood before she complained of pain; the latter was remarked, however, within twenty-four hours after the establishment of hæmorrhage. For three weeks both lower extremities had been swollen, and pitted readily on pressure. Six weeks before she began to lose constantly there was noted a slight discharge of blood after coitus. There was no bladder or rectal trouble. Eleven weeks previously to my seeing the patient, she began to feel sick, and latterly she had actually vomited at least once every day. No movements had been felt. On examination, the abdomen was occupied by a uniformly globular swelling, located centrally, and reaching to one inch above the umbilicus. It was somewhat soft, but seemed to harden under the hand in consequence of contraction. No fœtal heart or uterine souffle could be detected. The swelling was tender all over to the touch. The breasts were not enlarged, but were, in fact, flabby, and no colostrum could be obtained from either. On vaginal examination, the cervix was soft and patent, and nothing was felt in the cervix itself. The abdominal tumour moved the cervix readily, and was uterine; it was equal in size to a six months' pregnancy. My diagnosis was pregnancy, the child being dead. On July 12th, two days after the patient saw me, I received a letter from Dr. Townsend of Lewisham High-road (whose patient Annie T—— was), saying: "A hydatid mole weighing 2 lb. came away this morning; there was a good deal of hæmorrhage, and I had to clean out the uterus, swabbing the cavity with perchloride of iron."

It is stated by the majority of authors that in cases of cystic disease of the ovum the tumour rapidly increases in size, and that the size does not correspond with the supposed period of pregnancy. In the above case there was no rapid increase, and the size of the tumour corresponded well with that of the supposed period of pregnancy—viz., six months. The discharge was always hæmorrhagic, and at no time had it been noted as watery.

Gordon-square, W.C.

WOUND OF THE RADIAL ARTERY.

By E. ST. GEORGE QUEELY,
GOVERNMENT MEDICAL OFFICER, MAYTOWN DISTRICT, AND SURGEON TO THE PALMER HOSPITAL, QUEENSLAND.

THE following case of wounded radial artery came under my notice lately, and is, I think, worthy of note from the length of time that elapsed before the patient was treated, and from the quantity of blood lost.

W. F——, a miner, aged twenty-eight, while working in a shaft of an Anglo-Saxon gold-mine, received a cut across the left wrist, occasioned by a fall of sharp quartz. The wound was about two inches long, extending from the base of the thumb upwards and inwards. There was considerable hæmorrhage for some time, but it was controlled, and after three days the man was able to be about, with his arm in a sling. On the fifth day hæmorrhage set in again, and the patient lost a large quantity of blood; but a poultice of salt eventually stopped it. From the great loss of blood he naturally became very weak and anxious, especially as on the twelfth day a loss of blood again took place. I was therefore sent for, and arrived on the fifteenth day after the accident. The distance I was obliged to travel being forty miles over very rough country, I did not reach him until late at night, and as he was comfortable and no hæmorrhage had taken place for fifteen hours, I thought it better not to do anything until daylight. Next morning I visited the camp and learned the man had slept well and felt better. On removing the dressing, I found the wound looking healthy and commencing to granulate. As there had been no sign of blood for twenty-six hours, I merely applied lint saturated with carbolic oil, and told his friends to use it three or four times a day. I also improvised a tourniquet with a piece of cork,

and marked a place over the brachial artery, with instructions to apply it immediately in case of any fresh discharge, and that as soon as he could sit on a horse he was to come into town, the food obtained where he lodged not being sufficiently nourishing. I visited the case four times during the day, but was obliged to leave for town, having several hospital patients to see. Three days afterwards I heard that hæmorrhage had set in worse than ever and could not be controlled, and that the patient had to be carried into the hospital in a dying state. He arrived seventy-two hours afterwards, and when admitted was in a very low condition and quite blanched. His forearm was greatly swollen from several tight ligatures having been tied tightly round his arm. I had him placed on the operating table and administered chloroform. He inhaled a large quantity before coming under its influence. All ligatures, bandages, &c., being removed, blood immediately spirted from the wound, but was as quickly stopped by the tourniquet. I found the lower end of the artery easily, and twisted it, but could see no sign of its upper end; so I made an incision upwards and inwards over the artery for about two inches, and at last was able to place a ligature round it. The wound was closed by three catgut stitches and a pad of lint put over it. The man recovered from the anæsthetic quickly, but suffered some pain, which was relieved next day by the subcutaneous injection of morphia. His diet consisted of strong essences, milk, eggs, and port wine, with ammonia and iron as a tonic. Twelve days afterwards the ligature came away, and the patient was discharged on the thirtieth day, cured.

Now the question in this case is, Should I have operated on my visit at first, or was I justified in my treatment? Some people (lay, of course) thought I should have done so immediately on my arrival; but as there was no sign of hæmorrhage, and none had taken place for twenty-six hours, I hold that I was right.

Queensland.

ON THE MECHANICAL TREATMENT OF AMENORRHŒA.

By ALEXANDER DUKE, F.K.Q.C.P.I.,
EX-ASSISTANT MASTER OF THE ROTUNDA HOSPITAL, AND GYNÆCOLOGIST AT STEEVENS'S HOSPITAL, DUBLIN.

THE mechanical treatment of amenorrhœa by the introduction of an intra-uterine stem to be worn for some time is frequently followed by the desired result. The danger, however, of uterine stems compels the practitioner to enforce the recumbent position on the patient; and as this becomes exceedingly irksome, more especially in the case of younger patients, sufficient time is seldom allowed to effect the looked-for result. An uterine stem to be worn with comfort should be flexible, hollow, freely movable, and require no vaginal support in addition. It should also permit of the patient going about as usual, the exercise contributing in no small degree to the action of the stem. The making of such a stem self-retaining has been the great difficulty met with, as the various modifications of the instrument will testify. With regard to the advantages of the galvanic stem, I have strong doubts as to its action. I have given it a trial on several occasions, and am fully persuaded that a foreign body of *any kind* introduced into the uterine cavity will act quite as well. The stem I recommend is formed of spiral wire (plated), which I originally designed for the purpose of keeping the os and cervical canal patulous after the operation of division of the cervix for stenosis, and it has given me every satisfaction. These stems are sold by Messrs. Arnold of West Smithfield, and are made in various sizes, so that if a proper size be chosen and introduced, the patient can go about as usual, and be quite unconscious of wearing such. Indeed, on one occasion I introduced one of my stems without the patient's knowledge, and was rewarded by the menstrual flow being established, which had been in abeyance for over a year. It must be distinctly understood that I do not advocate the indiscriminate use of the stem as a routine treatment for amenorrhœa, but only in those cases where the usual plans of treatment by medicine &c. have failed, and where the symptoms complained of are such as fully to warrant mechanical interference. The stem should be introduced to its full length, and I have found that the spring introducer lately designed by me is the best instrument for placing the stem *in situ*. The base of the stem being flat and very light, the vaginal walls embrace it closely and in such a manner as effectually to prevent its falling out. Having experienced the value of this treatment of amenorrhœa, I have confidence in recommending it to others.

Dublin.

A Mirror OF HOSPITAL PRACTICE, BRITISH AND FOREIGN.

Nulla autem est alia pro certo noscendi via, nisi quamplurimas et morborum et dissectionum historias, tum aliorum tum proprias collectas habere, et inter se comparare.—MORGAGNI *De Sed. et Caus. Morb.*, lib. iv. Procemium.

WEST LONDON HOSPITAL.

FIVE RECENT CASES ILLUSTRATIVE OF CEREBRAL SURGERY; REMARKS.

(Under the care of Mr. C. B. KEETLEY and Drs. DONALD HOOD, J. B. BALL, and COLMAN.)

(*Continued from page 542.*)

IN our issue for last week we gave the first case of the series, one in which the skull was trephined for a bullet wound of the brain, and in which, although only a partial removal of the bullet was effected at the operation, the patient recovered. We also gave the reasons for regarding the flow of pus which came from the wound three or four days after the operation in Case 2 as having its origin in a cerebral abscess. A method of preserving the crown of bone removed by the trephine for re-implantation is illustrated in two cases. In Case 3 operation was only resorted to as a last resource, and not with any great hope of success. There being a clear history of injury and of discharge from the left ear, it was thought justifiable to perform an exploratory operation.

CASE 2. *Cerebral abscess, (?) of traumatic origin; trephining; recovery.*—E. W——, aged fifteen, domestic servant, was under the care of Dr. W. S. Colman and Mr. Keetley. The present illness was said to date from three weeks before admission. She received a severe thrashing from her mistress, including three boxes on the left ear. She says that soon after, and not before, she had discharge from that ear, and pain over the left temple, fixed and persistent. She vomited for the first time four days ago. Appetite has been fair. Occasional squint, and also short-sightedness, were noticed on the left side before the blows were inflicted.

On admission the girl was anæmic, sallow, and looking ill. Pupils equal and natural. No twitchings anywhere. Increasing weakness and disinclination for exertion complained of. Fixed pain in left temporal region of a fortnight's duration. Earache has been present, but has gone off. Curious stoop when walking; no incoördination; walks in a straight line and stands steady, with her heels together. Forehead narrow, but alike on both sides. No tenderness on percussing any part of skull or compressing the mastoid processes. Some tenderness on pressing the left eye back, and there is slight proptosis. No twitchings or tinglings. Reflexes everywhere normal. Mind and memory unimpaired. No enlarged cervical glands. Chest narrow, otherwise normal. Vomiting till four days ago, not since. Temperature on admission 99·4°, pulse 80, respiration 32. The ophthalmoscopic appearances were—Left eye: myopia (4 D at least). Disc, cup gone; edge rather indistinct; rest of fundus natural. Right: disc much swollen, greyish and striated; vessels dip slightly at periphery; a little distance to the temporal side is a distinct hæmorrhage, and along the vessel to the nasal side is some white exudation. No tubercles seen in either eye. Vision quite acute; the field does not seem contracted in either eye. Colour sense normal. Hearing on the right side good, twenty inches; left side, only eight inches. No discharge from ear now. Mr. Wainewright reports perforation of tympanic membrane just behind the handle of the malleus. Bone conduction seems perfect on both sides. Smell and taste normal. No defect of function found in any of the other cranial nerves, though careful and particular search was made. Urine pale and

clear; sp. gr. 1012; excess of phosphates; no albumen or sugar.

With regard to the family history, the father is said to have sciatica and a weak chest; paternal aunt, "consumption and tumours." Paternal grandmother died of cancer. No important diseases on the mother's side. Is one of eight children; four dead ("fits," "whooping-cough," "diarrhœa," "wasting in six weeks"). The patient had whooping-cough badly when two years old. Well since, but has been getting weak for four months. Has been in a heavy "place" for nine months.

On April 11th and 12th the patient was each day minutely examined by Dr. Colman. The pain was being relieved by an ice-bag, but the optic neuritis in the left eye was rapidly increasing. The edge of the disc was distinguishable now only at the upper part. The vessels were buried in it for some distance, especially the lateral ones. Neuritis of the right eye not much increased. On the 11th she had a good night after a chloral and bromide draught.

The operation was performed by Mr. Keetley. The head was previously shaved, cleansed with soap, &c., and dressed for some hours with moist antiseptic gauze. Chloroform was given, and a semicircular flap turned down to expose the area about an inch and a half above, and one inch in front of external auditory meatus. The temporal fascia and muscle and pericranium were reflected sufficiently, and a medium-sized trephine used. Dura mater dull and tense, pulsating less than normally. This was punctured, and there was an escape of clear fluid, showing under the microscope red blood-corpuscles, but no pus. The dura mater was freely incised, some clear fluid escaping rather copiously. The exposed brain looked healthy and did not bulge. A fine trocar and cannula was then passed successively—(1) downwards and inwards until it impinged on the upper surface of the petrous part of the temporal bone (a dry base of a skull was held by an assistant in such a way that it was quite easy to calculate, with it in view, the exact path of the trocar); (2) backwards, downwards, and inwards into the posterior part of the temporo-sphenoidal lobe; (3) forwards, downwards, and inwards into the anterior part of the same; (4) upwards and forwards into the frontal lobe; (5) directly inwards. The results were negative. Nos. 2, 3, and 4 punctures were made to the full depth possible with the trocar, which was, unfortunately, only about two inches and a half long, the instrument which should have been used having been found rusted. The dura mater was stitched with two catgut sutures. Bone removed by trephine was broken up with bone forceps and replaced. Temporal muscle sewn with buried sutures, skin with silver. Dressing: iodoform crystals, iodoform gauze (moist), and sponge. Bandage and strapping (Leslie's) freely used. Pulse good throughout the operation, the duration of which was one hour. The patient was delirious two hours after the operation, but became quiet after a hypodermic injection of morphia. At 8 P.M. she began to vomit, and continued to do so every ten minutes. The bandage was taken off, and reapplied very loosely.

April 13th (10 A.M.).—Temperature 102°; pulse 100, regular. She rambles a great deal, and complains much of pain in the temple and in the left eye. Wound dressed; looks healthy. No facial or ocular paralysis, but amblyopia. Can now distinguish only figures (not faces). Much more comfortable after dressing, and more rational.

14th.—She has not vomited since 9 A.M. yesterday. Rather more pain at site of operation; also in occiput and over mastoid. Considerable mastoid tenderness and some fulness this morning. Temperature 100·8°; pulse 104, regular. On ophthalmoscopic examination the left disc was much paler than before the operation, and the vessels not so much embedded. Right eye: neuritis not much increased; cup still absent and edge blurred; vessels appear to dip slightly; no hæmorrhages. No tubercles in either eye.

15th.—Very good night. Appetite better. Some puffiness of left cheek and lower eyelid. Less tenderness of eyeball. Does not complain at all. Pulse 92°; respiration 22; temperature 99°.

16th.—Same as yesterday, but puffiness and tenderness less. No tenderness of left orbit now. Pus observed at the edge of the dressing. Wound dressed at 8 P.M.; a considerable quantity of pus in the dressing. Flap looks quite healthy. Silver sutures removed and cicatrix opened at each end. Much pus welled up, evidently from the trephine hole. Wound dressed as before. Microscopically the pus-cells were extremely granular, and there was a great deal of granular débris. On ophthalmoscopic examination the neuritis was much less in the left eye. Right eye almost normal. Temperature (evening) 99·2°. Bowels open five times.

18th.—From this date no rise of temperature occurred, excepting once on the 20th, when 99·6° was reached. No pain. No tenderness anywhere. Appetite good.

19th.—Manner a little strange. "Ringing in ears." Wound dressed; looking well; no puffiness. Slept soundly.

20th.—Ophthalmoscopic examination: Left eye, disc normal. Vision perfect.

May 2nd.—Since the last note she has continued perfectly well. The wound has been dressed once a week. There is not much discharge. On ophthalmoscopic examination the optic neuritis on the right side was not subsiding. Edge of disc still blurred; vessels rather more blurred than before. A torch-shaped hæmorrhage just beyond the temporal edge of the disc.

She remained in hospital three months and a half longer. On May 11th she complained of the sight of the left eye, which was myopic. The last ophthalmic note taken while she stayed in hospital was by Mr. Vernon on May 17th, when the right disc was hyperæmic; veins turgid, with irregular outlines, and disturbance of choroidal pigment. Left disc very much the same; not so hyperæmic; showed a myopic crescent upwards. Granulations at one or two points of the wound had several times to be cauterised. Frequently there were complaints of headache. On June 4th the note was: "Has been complaining of pain in left side of head as when she came in, and tenderness for the last two days. Slight discharge from left ear again to-day." On July 6th she "complained of tenderness and occasional pain in two spots, one just above the ear, and the other about two inches higher; otherwise well." On Aug. 9th it was noted that there had been pain every day in the neighbourhood of the wound, a little above it. There was aching of the left eye, the sight of which had not improved. The pain did not keep her awake at night or cause her much inconvenience. Left ear discharging. A dark-coloured, hardish concretion was washed out on the previous day. It was syringed daily. On the 17th there had been no more discharge from the ear. She complained of loss of memory. This was possibly due to inattention or carelessness, as interesting facts were well recalled, and the patient was able to repeat poetry learnt the day before. The pain over the wound and at another point a little behind it was not severe, but constant. The left eye was perfectly blind. On the 21st, her memory being better and the pain less, she was discharged. She has since occasionally attended the hospital, and was last seen recently, more than a year after the operation, looking and feeling quite well, without any pain, and with good sight in both eyes.

CASE 3. *Doubtful symptoms of intra-cranial suppuration associated with a history of injury and afterwards with discharge from the left ear; exploratory trephining; death; disease of pons Varolii (new growth?).*—M. P——, aged seven years, was admitted into Hull ward, under the care of Dr. Hood, on May 25th, 1888. Fourteen days before admission she had a fall while playing and knocked her head against a window-sill. A small bruise (just visible) appeared at the centre of the left superciliary ridge. She seemed at the time not much hurt, but rather stunned; there was no bleeding from the nose or ears. The next day but one after the accident she was observed to stagger in her gait and complained of giddiness, but there was no vomiting until the day before admission. The staggering had been getting worse until then, and she had a slight squint (had had none previously). Her appetite was as usual. The bowels were acting. She vomited only after food. She was said never to have had any discharge from either ear. Family history good.

On admission there was slight internal squint of the left eye. No headache. Pain in chest. The left eye moved well when the right was closed. Double vision. No optic neuritis. Knee-jerks distinctly exaggerated. No ankle clonus; no paralysis, either motor or sensory, in face or extremities. Watch heard at two feet from either ear, and also on contact with either side of the head. No tender spot anywhere. She was given confection of senna.

May 28th.—No material change. Had only vomited once. Squint more marked. Suspicion of ankle-clonus. Pain across temples. Gait still staggering. Diplopia present.

29th.—The patient was ordered to take castor oil, also one grain of grey powder three times a day. She vomited twice in the evening.

31st.—Woke up with a start three times in the night; her arms twitched each time.

June 5th.—Comfortable. No convulsion; no headache. Vomited at times after taking the powders.

11th.—A discharge from the left ear was noticed last night. Gait decidedly worse. Legs carried wide apart, and very tottering.

12th.—Much worse. Had vomited constantly since yesterday. Very little food kept down for the last three days. Had a restless night. At 6 A.M., after being washed, she became faint, cold, almost pulseless, and of a livid colour. This passed off soon. An ice-bag was applied to her head, and hot bottles to her body. She had pain over the left eye. Since then she had been drowsy, but understood what was said to her. She had vomited frequently. The squint of the left eye remained; the eyes were otherwise normal. Pulse 104, weak. Temperature subnormal. It was thought justifiable to perform an exploratory operation. A semicircular incision, with the convexity upwards, was made over the squamous part of the left temporal bone, and the skin, with the muscle and fascia, divided and turned downwards. The pericranium being reflected, a button of bone was removed with the trephine (crown the size of a shilling). This button was passed through a small incision previously made (antiseptically) in the skin of the left thigh, and lodged in the subcutaneous tissue until wanted again for replantation. A carbolised sponge and bandage held it in place. When the skull was opened, the dura mater bulged slightly and pulsated plainly. A small opening being made in it and two bleeding vessels secured, the left temporo-sphenoidal and frontal lobes of the brain were punctured by an aspirator needle and also by a director in different directions, but with negative results. The dura mater was sewn up again, the button of bone taken from the thigh was cut up into small pieces and laid over the dura mater, and the temporal muscle and fascia brought over all and sutured with catgut. Lastly, the skin edges were united (not tightly) with two silver sutures, and the wound dressed with moist iodoform gauze and sponge (for pressure). At 7 P.M. she was semi-conscious; nodded when questioned; and there was less squint. At 12 P.M. she had vomited once; she was still slightly conscious; the temperature was normal, and the pulse 96.

13th.—Had passed a restless night, throwing off the bedclothes. She had vomited once since midnight—i.e., twice since the operation; but she had kept down half-a-pint of milk this morning. She had passed urine and a motion while in bed. She became more conscious at 4 A.M. She could then lift her head when asked to do so, but was still very drowsy. Squint as before. Pulse 100; temperature subnormal.

14th.—Slept little, lying almost unconscious, occasionally asking for ice or milk. Had three attacks of faintness, becoming pulseless and cold for two minutes or so each time. Vomited four times since last evening. Restless, throwing her arms about and her head from side to side. Thirsty. Temperature normal; pulse about 140. At 3 30 P.M. she was quite insensible; conjunctivæ and corneæ insensitive (the pupils had been dilated with atropine for ophthalmoscopic examination). Limbs rigid, especially the *left* arm; slight ptosis of the right upper eyelid. Squint variable. Temperature 101°; pulse weak, and not easily counted, about 130 (?); respiration rapid. A little later the right arm became completely paralysed; the left a shade less (?). It fell less heavily when raised. The left fingers were more bent on the palm than the right. At 8.20 P.M. she vomited about half a pint of black fluid matter, and died immediately afterwards. Temperature 105·6° at 7 P.M.; 105° after death.

Necropsy.—"No inflammation on cerebral side of wound. No abscess discovered. Pons Varolii enlarged to about three times its natural size, uniformly of yellowish colour, both externally and on section. No other abnormality discovered. Brain kept by pathologist for examination." No further report has been received by Mr. Keetley.

PRESBYTERIAN HOSPITAL, CHICAGO.

HYDATID CYST OF THE ABDOMEN; OPERATION; RECOVERY.

(Under the care of the late Professor MOSES GUNN.)

WE have this year given examples of the successful treatment of hydatid cysts by the operation of direct incision and drainage after suturing of the cyst wall to the abdominal parietes.[1] We give below the account of a case in which it was attempted to secure adhesion of the apposed surfaces before incision of the cyst, but in which the method employed did not answer, and the operation, practically, was the same as that mentioned. Various other methods have been tried with the object of obtaining adhesion of the apposed surfaces before incision of the cyst wall. Barwell[2] recommended suturing of the abdominal wall to the cyst three or four days before the completion of the operation; Simon of Heidelberg tried multiple punctures with this object, but this method does not obtain much popularity. Baudeleben in the Congress of German Surgeons brought a series of successful cases treated by the application of Vienna paste to the abdominal wall over the cyst. It required some six or seven days for the caustic to act, and the process was a painful one. Ranking made an incision through the parietes and then removed two semilunar pieces of the abdominal wall, incising the cyst at a later date. In this case the cyst appears to have resembled an enlargement of the pancreas in its early stages. For the following account we are indebted to Dr. C. W. Ward, who was the house surgeon during this patient's residence.

Charles W—— was admitted about June 5th, 1887. He was thirty-three years of age, married, a blacksmith by trade, and active in his habits. He was born in Germany, and the elicited family history was very good. Seven years ago, then a resident of Germany, the patient was seized with a sudden attack of abdominal pain, and a medical man, on palpation of the abdomen, found the existence of a tumour, and a diagnosis of hypertrophied pancreas was made. With this tumour there existed more or less ascites and marked abdominal distension. Fourteen weeks of diuretic treatment removed the ascitic condition, and the patient again resumed his vocation, feeling no appreciable discomfort, save a slight mental anxiety at the continued presence of the tumour. It caused no inconvenience until six years later, when he suffered from a second, though less severe, attack of pain, from which he seems to have quickly recovered.

On admission an examination was made. The subjective symptoms were a sharp cutting pain referred to the seat of the tumour, and a troublesome fermentative distension of the viscera following the ingestion of food. The objective symptom was a tumour located two inches and a half to the left of the mesial line and an inch or so below the hypochondrium. The protruding abdomen conveyed an impression of its size to be about that of a small orange. The tumour was scarcely movable, elastic and tense to the touch, and caused no pain or tenderness when manipulated. On percussion, an area of dulness existed corresponding in size to that of the tumour. The characteristic thrill known as "hydatid fremitus" which is observed in large hydatid cysts filled with daughter cysts, and which is probably produced by the concussion of these with each other, was here elicited, and upon that sign a diagnosis of hydatid cyst was pronounced. His complexion was sallow, appetite good, bowels regular, and urine normal.

The patient was advised to submit to an operation, but as he had known of a "similar case in Germany" that resulted fatally, his courage failed him, and he declined, leaving for home that night. However, a month later (July 8th) he returned, having in the meantime laid the matter before his family and his friends, who induced him to reverse his decision and accept operative measures. There had been no alteration of symptoms during this time, and Tuesday, July 12th, was arranged for making the primary incision.

The operation was planned to consist of two steps: the first, to cut down upon the tumour until reaching the internal fascia of the rectus abdominis muscle, then pack the incision with iodoform gauze, aiming thereby to excite inflammatory adhesion of the peritoneum; the second, then to open the cyst cavity, evacuate its contents so far as possible, and resort to drainage for what might remain. As occasionally occurs, so here, the plans were only partially realised. The incision was made over the tumour in the left hypochondriac region about four inches in length, and the wound well packed with iodoform gauze.

One week later (July 19th) the packing was removed, but no evidence of adhesion was found. Nevertheless, the fascia was opened and the cyst wall exposed. The cyst wall, which was recognised by its greyish, cartilaginous, and translucent appearance, was opened on the grooved

[1] Vol. i., pp. 477, 528, Mirror of Hospital Practice.
[2] Medico-Chirurgical Society, 1887.

director, and the contained fluid, limpid and serous in character, jetted forth. On enlarging the opening, the daughter cysts, opal-like bodies, came forth in great profusion. By means of a large hæmostatic forceps, often used in colpo-hysterectomy for controlling hæmorrhage from the ovarian arteries, many daughter cysts were removed. The incised cyst wall was then sutured to the abdominal walls by six silk sutures, and a drainage-tube half an inch in diameter introduced into the cyst to a depth of about six inches. The cyst was then thoroughly cleansed with a 5 per cent. solution of carbolic acid, dressings applied, and the patient placed in bed. The 6 P.M. record showed the temperature to be 100·4°; pulse 102.

July 20th.—Passed a quiet night, but failed to sleep. Maximum record: temperature 99·4°; pulse 98. He received a small amount of nourishment, such as milk, tea, toast, and egg. Urine 28 oz. Dressings saturated every twelve hours with 2 per cent. carbolic acid solution.

21st.—Patient slept well during the night. Breakfast consisted of beefsteak, oatmeal, coffee, and toast. At 7.10 A.M. the temperature was 100·8°, and the pulse 104; at 1.45 P.M., temperature 101·6°, pulse 112; 8.30 P.M., temperature 103°, pulse 102. At 2 P.M. the dressings were changed and quite a number of daughter cysts were "fished out" by the use of the hæmostatic forceps. Many of them presented a biliary colouring, thus showing their proximity to the liver. At 9 P.M. the patient was given twenty grains of antipyrin.

22nd.—Slept well till 3 A.M. Felt sick and refused breakfast. At 10 A.M. he was given two drachms of sulphate of magnesia, and at 3 P.M. ten grains of antipyrin. At 8.15 A.M., temperature 100·2°, pulse 98; at 2 P.M., temperature 101·4°, pulse 100. At 3 P.M. the dressings were changed; more "fishing."

In a week the patient walked about the ward. The wound was dressed daily, carbolic acid (5 per cent. solution) being used for irrigation. At each dressing resort was made to the "fishing" process.

Aug. 26th.—The last daughter cyst was removed to-day. Dressings changed each alternate day, and the use of the drainage-tube still continued. Appetite good and general health unimpaired. Walks about the lawn.

Oct. 1st.—The drainage-tube has been lessened and shortened, but not yet discarded. Complains of a "nervousness" that worries him. Boric acid irrigations substituted. Ten minims of dilute phosphoric acid given three times a day as medicine. Out-door exercise advised.

Nov. 22nd.—Drainage-tube removed. "Nervousness" continues.

Jan. 16th.—Patient discharged. Abdominal opening merely a fistula. Discharge simply serous and small in amount. Still "nervous."

On May 15th Dr. Charles W. Hall wrote: "W—— walked into my office with a firm step. He enjoys excellent health and is in good spirits. His only complaint is that of weakness or unsteadiness in his legs, and that after five days of labour he is so tired as to feel it necessary to rest the other two days of the week. The cicatrix is prominent, and contains a fistulous opening about the size of a small quill, which discharges slightly."

Remarks by Dr. WARD.—Two months later I saw the patient, and found him about as described above. In closing I want to inquire, What caused the "nervousness" of which he continually complained?

Medical Societies.

ROYAL ACADEMY OF MEDICINE IN IRELAND.

Polypus of the Gum.—Brain Tumour with Thinning of Skull.—Melanotic Sarcoma of the Eye.—A Fœtus with Cystic Kidneys.

A MEETING of the Pathological Section was held on May 31st.

Mr. ARTHUR W. W. BAKER read a paper on the subject of Polypus of the Gum. These tumours vary from the size of a pea to a horse chestnut, and are found on the gum in the neighbourhood of diseased teeth. They are said to be chiefly caused by the ragged edge of a carious tooth, but it is probable that the ptomaines resulting from the operations of the bacteria in the dentinal tubules have more to do with their etiology than is usually supposed. Wedl and Rothman, in their writings, support this view. The growths in question are essentially papillomatous, and exhibit on section large branching papillæ covered with a thicker layer than normal of squamous epithelium. The polypi are purely local in their origin, and non-malignant.—Dr. SCOTT said that the growths were papillomata. These growths were an advanced link of connexion between papilloma and epithelioma, between which there was a well-known clinical difference.—Dr. CHARLES BALL said the tumours were an example of the way in which irritating discharges produced papillomatous and sometimes even adenomatous growths.—Mr. BAKER, in reply, said he was glad that Dr. Scott looked on them as a connecting link between papillomata and epitheliomata, for that was his (Mr. Baker's) own view with respect to them, although he could not say that the slides showed sufficient evidence of it.

Dr. BALL showed a Tumour of the Brain (angio-sarcoma) as large as a turkey's egg, occupying the right occipital and portion of the temporo-sphenoidal lobes. The symptoms during life were pain in the head, vomiting, double optic neuritis, and the presence of a pulsating venous tumour on the vertex, from which large veins radiated, and beneath which a perforation of the skull could be felt. The case was diagnosed as one of perforating angioma, probably originating in the dura mater; and, acting on this diagnosis, simultaneous ligature of both external carotid arteries above the origin of the facial was had recourse to, with a view of diminishing the blood-supply through the middle meningeal and temporal arteries. All symptoms were relieved for a month, after which they reappeared, gradually increased in severity, and proved fatal, the patient remaining conscious and free from all paralysis to the last. The necropsy showed that the venous tumour of the vertex was caused by a number of veins coming through the skull and carrying the blood from the great longitudinal sinus, the normal flow of blood into the right lateral sinus being prevented by the pressure of the tumour on the torcular Herophili, at which place it was adherent to the dura mater—a condition similar to the caput medusæ met with at the umbilicus in cases of obstructed vena cava. The inner surface of the skull was roughened and eroded over its entire extent. He considered that the marked improvement following operation for a short time could only be accounted for by the loss of blood at the operation, and subsequently by a moderate secondary hæmorrhage relieving the intra-cranial tension.—Dr. PATTERSON said the tumour was very sharply differentiated from the surrounding brain substance, and its outer surface was covered with a dense network of vessels, suggesting extreme vascularity. As to the etiology of the tumour, he thought it highly probable that it originated in the perivascular sheaths, and developed from them, for in some places the vessels could be seen surrounded by rings of sarcomatous tissue. As to the little nodules removed from the dura mater, they also seemed to be sarcomatous tissue. It was right to state that this system of starving tumours by cutting off the vascular supply had not hitherto been attended with very satisfactory results, even in cases where the vessels dealt with directly communicated with the tumour.—Dr. BENNETT said he was equally responsible with Dr. Ball for the error of diagnosis. The condition of the cranium was due to an increase of intra-cranial pressure—not a local, but a general increase, such as occurred in hydrocephalus in children.—Mr. SWANZY said that with a tumour in the right occipital lobe there should have been hemianopsia on the right side. That could hardly have been missed, and it would have pointed to a lesion very far from the position in which the only lesion was supposed to be.—Dr. MILES said that lesions of the occipital lobe were associated with colour-blindness. It was very difficult to conceive how a large tumour like this could have existed without giving rise to paralytic symptoms. In fact, as far as they could see, the presence of a pulsating tumour of the scalp appeared to have overridden everything else in the diagnosis.—Dr. BALL, in reply, said the first question was as to whether there had been erosion of the inside of this skull or not. As to this, a great deal depended on what was meant by erosion. That the surface of the bone had been absorbed in many places there was no doubt; and the inner surface of the external plate had become exposed.

Dr. E. H. BENNETT exhibited an example of Melanotic Sarcoma of the Eye remarkable for its slow growth, while

its histological characters were eminently malignant. The disease had been detected as intra-ocular more than eight years ago at St. Mark's Hospital. Some considerable time since the globe had given way, and a fungus protruded, which had attained the size of a closed fist. Of late this fungus bled freely; this symptom at last frightened the patient—a woman nearly fifty years of age—and caused her to submit to its removal. The removal was facilitated by the fact that under ether the muscles no longer supported the fungus, and its sac (the remains of the globe) was exposed by the tumour falling out on the face. The bleeding, which was very free, was at once arrested on the removal of the globe. On section the tumour was seen to be formed of a jet-black mass, except in part, where a lobe of white tissue strongly contrasted with the remainder. Microscopically, the tissue appeared in many parts that of alveolar sarcoma.

Dr. BAGOT showed a Female Fœtus with Congenital Cystic Degeneration of the Kidneys. Externally, with the exception of the enlargement of the abdomen, the child presented no malformation. On opening the abdomen, he found that it contained about two ounces of peritoneal fluid. The peritoneum covering the kidneys was thickened, and showed signs of inflammation, band-like adhesions passing to the intestines. The latter were in some places adherent to each other. The ureters were extremely thin, but pervious. Both kidneys were symmetrically enlarged; but cysts were nowhere visible on their surfaces. On section their normal structure was seen to be replaced by an extremely fine network of minute cysts, thus resembling the variety of kidney described by Virchow as "the fine cystoid." The tubules could be seen to have undergone an irregular dilatation, some appearing normal, others more or less dilated, till in most parts they had become replaced by large epithelial-lined spaces. The epithelium of the tubules appeared in many places to have undergone proliferation—a condition which was also present in some of the glomeruli. The bloodvessels were greatly congested, and hæmorrhages into the tissues could be seen here and there. Concerning the etiology of this condition various theories have been put forward, amongst which that by Virchow has been the most generally accepted—viz., that it is caused by atresia of the papillæ, due to a fœtal inflammation, brought about by an abundant deposit of urinary salts in the tubules. Thorn, however, believes that this condition is more frequently brought about by inflammation passing from the calices to the substance of the papillæ; while Chotinsky says that occlusion of the tubules is to a great extent due to successive multiplication of the epithelium. Others hold that it is due to a primary fault of development, and that in this condition "we have really to do with a more or less persistent mesonephros, associated in greater or less degree with normal renal tissue.

Reviews and Notices of Books.

Lectures on General Pathology. By JULIUS COHNHEIM. Translated from the Second German Edition by ALEX. B. MCKEE, M.B. Dub. Section 1: The Pathology of the Circulation. London: The New Sydenham Society. 1889.

THE publication of the work wherein the late Professor Cohnheim may be said to have gathered the harvest of his remarkable scientific career is an event regarding which the New Sydenham Society deserves great credit. It has, indeed, often been a matter of surprise to us that no English translation of these "Vorlesungen" should hitherto have appeared, for they in no small measure mark an epoch in the history of pathology. The first edition appeared in 1877, and the second in 1882. Two years later, at the early age of forty-five, their gifted author passed away, leaving behind him not only this but numerous other contributions to pathology which bear the stamp of genius. In a sense, indeed, Cohnheim created a new school of pathology in his aims at studying it from the experimental and physiological side; and, brief as was his career, he succeeded in not only adding new and important contributions himself, but in inspiring many workers to pursue investigations of many problems upon new lines and methods, with far-reaching result. It may be that in the more recent pursuit of the etiology of morbid processes, in the absorbing and fascinating study of the relations between bacterial organisms and disease, there has been a diversion of attention from the important subjects with which Cohnheim mainly dealt. But when the history of pathology comes to be written there cannot fail to be found a most prominent place for such work as he did, both in the facts he disclosed and the fertile suggestions that he made, especially in such subjects as embolism, inflammation, anæmia, tuberculosis, and morbid growths.

The volume before us contains that section of the lectures which deal with the Circulation. It embodies, therefore, much of the ground with which the author himself was personally most familiar. Opening with the study of the circulatory derangements depending upon lesions of the heart and its valves, and passing thence to the conditions of the circulation in the peripheral vessels, the subjects of local Anæmia and Hyperæmia are fully discussed. Next the author deals with Thrombosis and Embolism, where we note the statement of the view that thrombosis occurs not in consequence merely of the arrest or stagnation of the blood stream, but on account of the impaired nutrition of the endothelial lining of the vessels which such stagnation may itself occasion. It is shown also that in the "organisation" of a thrombus it is not essential even for the vessel wall to participate, but that the whole process may be effected by emigrant wandering cells penetrating the thrombus from without, for of course the older idea of direct conversion of the clot is quite abandoned. The results of the softening of thrombi and the mechanical effects of thrombosis upon the circulation lead naturally to a discussion of the subject of embolism, which is dealt with in an exhaustive and most interesting manner. Many readers will doubtless turn to the following chapter, that on Inflammation, in the expectation of finding it treated in a philosophical manner: nor will they be disappointed; for whether we regard the style in which the description of the process is given, the minute and painstaking way in which each of its phenomena is treated, or the completeness with which the whole subject is viewed on all sides, this chapter by itself bears the impress of the master hand. The subject of inflammation is in truth the keystone of morbid action, and it was Cohnheim's great service to demonstrate the preponderant influence of the circulation in the process. The remaining topics dealt with in this volume, Hæmorrhage and Anæmia (we would draw special attention to the discussion of "essential anæmia"), although each of them of great interest, pale in importance before this unique exposition of inflammation.

The influence of Cohnheim's teaching has shown itself in many recent works on pathology, but hitherto the English-reading student has had to be content with the descriptions of his work at second-hand. He will now have the opportunity of studying the words of the teacher himself, and he cannot fail to be impressed by the depth of knowledge and clear thinking that are evinced on every page. For this boon he has to thank the New Sydenham Society, and especially the able translator, Dr. McKee, who has succeeded admirably in the by no means easy task of rendering such a work as this into another language without impairing the freshness or terseness of the original.

The Anatomy of Labour, as studied in Frozen Sections, and its bearing on Clinical Work. By A. H. F. BARBOUR, M.D. Edinburgh: W. & A. K. Johnston. 1889.

THIS little book is explanatory of the author's Atlas on the same subject. Though small in size, it is great in

value, summing up as it does the present condition of knowledge on the subject, for much of which we are indebted to Dr. Barbour. The first part of the book gives these results; the second gives the literature of the subject in the form of references, tables, and summaries. The amount of work, of one kind and another, here represented is very great, and the book will always, we think, maintain its place as a standard authority on the anatomy of labour. The uterus and pelvis are treated before labour, in each of the stages of labour, and after labour. The facts are derived from gross and from microscopical evidence, and include the consideration of the "lower uterine segment," which, though not yet fully worked out, seems to belong unmistakably to the body, and not to the neck of the womb.

There are few criticisms for us to make. A few changes might be made in a subsequent edition, which would make some details clearer. For instance, on page 46, the placental site is described as thicker, and on page 52 as thinner, than the rest of the uterus. In Chapter 4 the word "conjugate" is incorrectly used (*passim*) to denote antero-posterior diameters other than that of the brim. A "conjugate" is a technical term, meaning the lesser diameter of an ellipse, and only applies to the antero-posterior diameter of the brim. There is an advantage in this, inasmuch as it is only necessary to speak of the "conjugate," since the only conjugate is that of the brim; and it is as unnecessary and redundant to speak of the "conjugate of the brim" as it would be to speak of the brain of the head or the fingers of the hand. It is plain that, in future, the terms "extension" and "flexion" can only be taken to denote the lesser or greater coincidence of the long axis of the head with that of the genital canal, and not separation or approach of the chin from or to the chest. The elevation of the pelvic peritoneum, except that of Douglas's pouch, during pregnancy, and still more during labour; the relation of the ureters as regards the possibility of their compression; and the imperfect elevation of the bladder during labour, are all of great interest. In Chapter 5 the bearing of clinical facts on frozen sections of the third stage is considered. Here we think a little more caution was required, for, as regards the clinical facts, some of the most important of them have been the subject of prolonged discussion and reinvestigation, with the result that former descriptions require revision. There is no trace of this in the chapter before us, and, while the literature of frozen sections is given, the literature of the clinical side is not alluded to. For many reasons, the evidence of frozen sections from the third stage of labour is less weighty than that of the other stages, and the question is not yet settled. It is not unlikely that some of the statements here made will have to be withdrawn, and we hold that in a work like the present this should never be necessary. It is far better to assert nothing which cannot be proved, for unproved assertions often cost others much weary and unnecessary trouble, and really impede the advance of knowledge.

The book, small as it is, is so full of facts that it is not easy to find what is searched for, especially as the object of search often occupies pages remote from each other. An index, and a pretty full one, should certainly be added. A second edition of this excellent work should be even more valuable.

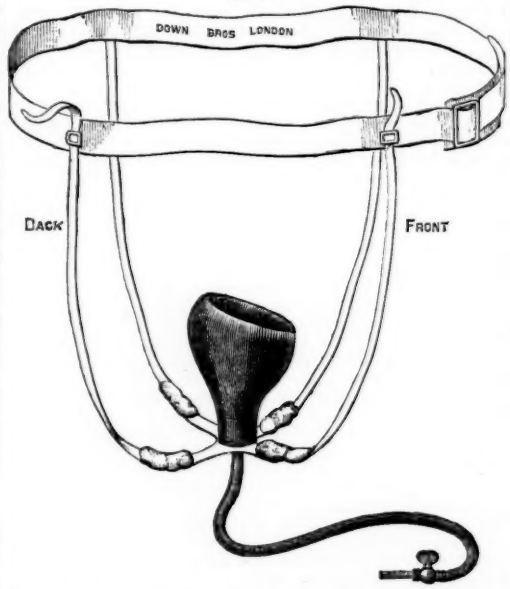
VICTORIA HOSPITAL FOR CHILDREN, Queen's-road, Chelsea.—On the 11th inst., the Organising Committee and delegates from the temperance trades and friendly societies and clubs handed over to the chairman and committee of the hospital the sum of £272 16*s.* 10*d.*, being the net proceeds of the most successful church parade which has yet been held in Chelsea.

New Inventions.

HYDROSTATIC REPOSITOR.

CASES of chronic inversion of the uterus are happily not of very frequent occurrence, but they are sufficiently common to warrant the adoption of special means in their treatment. No amount of manual dexterity and patience, however great, will suffice to replace the chronically inverted uterus, but steady and well-directed mechanical pressure will generally effect reduction. The cup and stem repositors, which have hitherto been used with much success, are open to at least two objections: 1. The necessity for changing the cups as reduction proceeds. 2. The difficulty in withdrawing the instrument when reduction has been

FIG. 1.



effected; for not only does the cervix then grip the stem *below* the cusp, but this latter also acts as the plunger in a suction pump, and the negative pressure induced by attempted withdrawal is very great. The report in THE LANCET of May 18th of cases related at a meeting of the Obstetrical Society of London fully illustrates these difficulties. I have therefore been induced to elaborate the rough model of a hydrostatic repositor which I designed in the year 1886. The instrument was exhibited at the Leeds meeting by the makers, Messrs. Down Bros. It consists of a double india-rubber bag (Figs. 1 and 2) mounted on a steel X-shaped frame, and connected with a stout rubber tube called the supply-pipe. It is kept in position by four *in*elastic perineal bands attached to the four points of the X frame and buckling on to a stout waistband, which latter may, if required, be coated with adhesive plaster. The arrangement of the frame leaves the meatus urinarius and the anus uncovered, so that the patient is enabled to micturate and defecate. The pressure is applied through the supply-pipe by any fluid, from compressed air to mercury (oil alone excepted), and by any means, from a Higginson's syringe to a reservoir over the patient's bed, or the ordinary service supply-pipe. Its advantages are:—1. It can be thoroughly disinfected by any solu-

FIG. 2.

tion (e.g., sublimate) before use. 2. The bag being elastic, it envelops the womb; and the power being hydrostatic, it adjusts itself accurately to that organ, while the pressure is uniformly distributed over the whole of the body to be reduced. Thus the bloodvessels and lymphatics are emptied, engorgement is diminished, and reduction materially favoured. 3. The pressure being constant and uniform, reduction takes place in the line of least resistance, and the receding uterus is steadily followed up by the reducing agent. 4. The posterior border being longer than the anterior, the axis of the curves of reposition tends to coincide with the axis of the uterus. (Fig. 2.) 5. The pressure can be regulated to a nicety, especially by a reservoir suspended over the patient's bed. 6. Reduction may be effected with the patient in any position, from the genu-pectoral to the dorsal decubitus. 7. Reduction having been effected, the bag is emptied by disconnecting the supply-tube and the reservoir. The upper part then collapses, and the whole is easily withdrawn from the vagina.

Fig. 1 represents the repositor with the bands and belt attached. Fig. 2 is semi-diagrammatic, the shaded portion representing a vertical section through the inverted cup (ready for use), and the dotted lines, approximately, the various curves assumed during distension of the instrument and reposition of the uterus. The instrument has been well and faithfully made from my detailed drawings by Messrs. Down Bros. of St. Thomas's-street, Borough.

B. CAMPBELL GOWAN, M.R.C.S., L.R.C.P., L.S.A.
Great Stanmore.

THE BRITISH ASSOCIATION.

THE various Sections of the British Association commenced their labours on Thursday, the 12th inst., large audiences being the rule and the addresses being well received.

BIOLOGY SECTION.

Canon Tristram read the address which had been prepared on this subject by the President of the Section, Dr. Burdon Sanderson, who was prevented by illness from being present. After an introduction the address proceeded :—

"Physiology first studies man and the higher animals, and proceeds to the higher plants, then to invertebrates and cryptogams, ending where development begins. From the beginning her aim has been to correlate function with structure, at first roughly, afterwards, when her methods of observation became scientific, more and more accurately, the principle being that every appreciable difference of structure corresponds to a difference of function; and, inversely, that each endowment of a living organ must be explained, if explained at all, as springing from its structure. It is not difficult to see whither this method must eventually lead us. For, inasmuch as function is more complicated than structure, the result of proceeding, as physiology normally does, from structure to function must inevitably be to bring us face to face with functional differences which have no structural difference to explain them. By multiplying examples, they would in each case come to this issue—plurality of function with unity of structure, the unity being represented by a simple structural element, be it retinal cone or cell, possessed of numerous endowments. Whenever this point is arrived at in any investigation structure must for the moment cease to be our guide, and in general two courses or alternatives are open to us: one is to fall back on that worn-out *Deus ex machinâ*, protoplasm, as if it afforded a sufficient explanation of everything which cannot be explained otherwise, and accordingly to defer the consideration of the functions which have no demonstrable connexion with structure as for the present beyond the scope of investigation; the other is, retaining our hold of the fundamental principle of correlation, to take the problem in reverse—i.e., to use analysis of function as a guide to the ultra-microscopical analysis of structure. I need scarcely say that of these two courses the first is wrong, the second right, for in following it we still hold to the fundamental principle that living material acts by virtue of its structure, provided that we allow the term structure to be used in a sense which carries it beyond the limits of anatomical investigation—i.e., beyond the knowledge which can be attained either by the scalpel or the microscope. We thus proceed from function to structure, instead of the other way. In thus changing direction we are not departing from the traditions of our science."

Having dwelt upon the discoveries of Haller and others, the address went on to describe life as "a cyclosis in which the organism returned after every cycle to the same point of departure, ever changing, yet ever the same." After touching upon the relation of oxygen to living matter and vital process and other cognate subjects, an outline or sketch was given of what might, if there were time to complete it, be an adequate conception of the mechanism and process of life. The following passages concluded the address :—

"What we have to guard against is the mixing of two methods, and, so far as we are concerned, the intrusion into our subject of philosophical speculation. Let us willingly and with our hearts do homage to 'divine philosophy,' but let that homage be rendered outside the limits of our science. Let us, if we are so inclined, cross the frontier and philosophise; but for my part, as a physiologist, I feel more disposed to do my best to furnish professed philosophers with such facts relating to structure and mechanism as may serve them as aids in the investigation of those deeper problems which concern man's relations to the past, the present, and the unknown future."

ANTHROPOLOGICAL SECTION: HEREDITY.

The President, Sir William Turner, F.R.S., delivered an address upon "Heredity." After some introductory observations, Sir W. Turner said that in its relations to man, his structure, functions, and diseases, the subject of heredity had long occupied a prominent position in the minds of anatomists, physiologists, and physicians. That certain diseases, for example, were hereditary was recognised by Hippocrates, who stated generally that hereditary diseases were difficult to remove, and the influence which the hereditary transmission of disease exercised upon the duration of life was the subject of a chapter in numerous works on practical medicine, and formed an important element in the valuation of lives for life insurance. Sir W. Turner described at some length the latest discoveries in the field of biology, and referred extensively to Charles Darwin, Mr. Francis Galton, Professor Weismann, and others. The lecturer then proceeded to examples of hereditary malformation, and continued as follows:—"These examples illustrate what may be called the coarser kinds of hereditary deformity, where the redundancies or defects in parts of the body are so gross as at once to attract attention. But modifications or variations in structure that can be transmitted from parent to offspring are by no means limited to changes which can be detected by the naked eye. They are sometimes so minute as to be determined rather by the modifications which they occasion in the function of the organ than by the ready recognition of structural variations. One of the most interesting of these is the affection known as Daltonism, or colour-blindness, which has distinctly been shown to be hereditary, and which is due, apparently, in the majority of cases, to a defect in the development of the retina, or of the nerve of sight which ends in it, though in some instances it may be occasioned by defective development of the brain itself. Dr. Horner has related a most interesting family history, in which the colour-blindness was traced through seven generations. In this family the males were the persons affected, though the peculiarity was transmitted through the females, who themselves remained unaffected. The family tree showed that in the sixth generation seven mothers had children. Their sons, collectively nine in number, were all colour-blind with the exception of one son, while none of their nine daughters showed the hereditary defect. ..... The eye is not the only organ of sense which exhibits a tendency to the production of hereditary congenital defects. The ear is similarly affected; and intimately associated with congenital deafness is an inability to speak articulately, which occasions the condition termed deaf-mutism. ..... Mr. David Buxton, who has paid great attention to this subject, states that the probability of congenital deafness in the offspring is nearly seven times greater when both parents are deaf than when only one is so; in the latter case, the chance of a child being born deaf is less than ¾ per cent.; in the former, the chances are that 5 per cent. of the children will be deaf-mutes. ..... Had one been discussing the subject of hereditary disease twenty years ago, the first example probably that would have been adduced would have been tuberculosis, but the additions to our knowledge of late years throw some doubt

upon its hereditary character. There can, of course, be no question that tubercular disease propagates itself in numerous families from generation to generation, and that such families show a special susceptibility or tendency to this disease in one or other of its forms. But while fully admitting the predisposition to it which exists in certain families, there is reason to think that the structural disease itself is not hereditarily transmitted, but that it is directly excited in each individual in whom it appears by a process of external infection due to the action of the tubercle bacillus. Still, if the disease itself be not inherited, a particular temperament which renders the constitution liable to be attacked by it is capable of hereditary transmission.....The germ from the cancerous parent must be so far different from the normal as after the lapse of years to engender the cancerous condition. Heredity is also one of the most powerful factors in the production of those affections which we call gout and rheumatism."

After adducing several family histories in which the heredity of cataract and other diseases is suggested, Sir W. Turner went on to treat of the transmission of acquired characteristics, and said:—

"If we could conceive both parents to be physiologically perfect, then it may be presumed that the offspring would be so also. ..... Should both parents be physiologically imperfect, we may expect the imperfections, if they are of a like nature, to be intensified in the children. It is in this respect, therefore, that the risk of consanguineous marriages arises, for no family can lay claim to physiological perfection. ..... So far as man is concerned, the evidence in favour of a tendency to the transmission of both structural and functional modifications which are either of disservice or positively injurious, or both, is quite as capable of proof as that for the transmission of characters which are likely to be of service. Hence useless as well as useful characters may be selected and transmitted hereditarily. I have dwelt somewhat at length on the transmissibility of useless characters, for it is an aspect of the subject which more especially presents itself to the notice of the pathologist and physician, and little, if at all, to that of those naturalists whose studies are almost exclusively directed to the examination of organisms in their normal condition. But when we look at man, his diseases form so large a factor in his life that they and the effects which they produce cannot be ignored in the study of his nature."

Having pointed out the conflict of opinion existing as to whether the somatogenic acquired characters are transmissible from parent to offspring, Sir William Turner continued:—

"It may appear, therefore, to be both rash and presumptuous on my part to offer an opinion on this subject. I should, indeed, have been slow to do so had I not thought that there were some aspects of the question which seemed not to have been sufficiently considered in its discussion. In the first place, I would, however, express my agreement with much that has been said by Professor Weismann on the want of sufficient evidence to justify the statement that a mutilation which has affected a parent can be transmitted to the offspring. It is, I suppose, within the range of knowledge of most of us that children born of parents who have lost an eye, an arm, or a leg come into the world with the full complement of eyes and limbs. The mutilation of the parent has not affected the offspring; and one would, indeed, scarcely expect to find that such gross visible losses of parts as take place when a limb is removed by an accident or a surgical operation should be repeated in the offspring. But a similar remark is also applicable to such minor mutilations as scars, of the transmission of which to the offspring, though it has been stoutly contended for by some, yet seems not to be supported by sufficiently definite instances. I should search for illustrations of the transmission of somatogenic characters in the more subtle processes which affect living organisms, rather than those which are produced by violence and accident."

In conclusion Sir William Turner said:—

"Man is a living organism, with a physical structure which discharges a variety of functions, and both structure and functions correspond in many respects, though with characteristic differences, with those which are found in animals. The study of his physical frame cannot therefore be separated from that of other living organisms, and the processes which take place in the one must also be investigated in the other. Hence we require, in the special consideration of the physical framework of man, to give due weight to those general features of structure and functions which he shares in common with other living organisms. But, whatever may have been the origin of his frame, whether by evolution from some animal form or otherwise, we can scarcely expect it ever to attain any greater perfection than it at present possesses. The physical aspect of the question, although of vast importance and interest, yet by no means covers the whole ground of man's nature, for in him we recognise the presence of an element beyond and above his animal framework. Man is also endowed with a spiritual nature. He possesses a conscious responsibility which enables him to control his animal nature, to exercise a discriminating power over his actions, and which places him on a far higher and altogether different platform than that occupied by the beasts which perish. The kind of evolution which we are to hope and strive for in him is the perfecting of this spiritual nature, so that the standard of the whole human race may be elevated and brought into more harmonious relation with that which is holy and divine.'

Mr. Francis Galton, F.R.S., read a paper on the "Advisability of assigning Marks for Bodily Efficiency in the Examinations of Candidates for the Public Services," and pointed out that the proposal had no reference whatever to the pass examinations now made by medical men in order to eliminate candidates who are absolutely unfit, but to give additional marks to those youths who, being fit for service, were at the same time exceptionally well fit so far as bodily efficiency was concerned.

Papers were also read by Dr. J. G. Garson (in the absence of Dr. Ridolfo Livi) on the "Development of the Wisdom Teeth"; by Dr. W. K. Sibley, on "Left-leggedness," which went to prove that, whilst man was naturally or artificially right-handed, he was at the same time left-legged; and a paper on the subject of "The occasional Eighth True Rib in Man and its relation to Right-handedness," by Professor D. J. Cunningham. The proceedings then closed.

CHEMISTRY SECTION.

Amongst the papers read in this Section was one by Dr. ISAAC ASHE, entitled "Dimidium: an attempt to represent the Chemical Elements by Physical Forms, with Models of the Elements, from Hydrogen to Nickel, constructed in accordance therewith." The author pointed out that when the combining weight of an element was divided by the number representing its combining power, or valency, as compared in both cases with hydrogen, the quotient in many cases presented the fraction ½, instead of an integer number; and that in many other cases, particularly in the triad series, an integer quotient, with unity for a remainder, was to be obtained by doubling the combining weight before dividing. Hence he inferred that an element having half the weight of hydrogen would be found to be the primordial element out of which the other elements were constructed. This hypothetic element he proposed to call "dimidium." The number of atoms of dimidium which would go to form any given element would be double the number representing the combining weight of that element as compared with hydrogen. Dimidium itself might probably consist of a number of vortex rings, according to Sir W. Thomson's theory, placed one on the top of another, thus forming an elongated circular bar; a limit would be placed to the length of the bar so compacted, in consequence of a point being reached on each side of the centre, in a lengthwise direction, where the forces of attraction and repulsion between the rings balanced each other. Possibly the hollow tube thus formed might itself be filled with some still lower form of matter, out of which the vortex rings themselves might have been made, perhaps perfect spheres, to which Mr. Crookes' term "protyle" might be applied. Assuming, then, the existence of this primordial linear element, and representing its atoms by small metallic bars of brass wire, the author showed that—taking in each case the number of bars indicated as above, by doubling the combining weight of each element—he had been able to construct a series of models of the chemical elements, in which their combining power, their positive or negative condition, and their modes of combination were all expressed, as well as their combining weight. He further showed that the forms brought out in these models corresponded with the crystalline forms known to belong to certain of these elements; and how the phenomenon of the expansion of water when freezing might be explained by reference to the form employed for the

molecule of that compound, which was hexagonal in its general outline. The forms adopted for the elements in these models were also shown to correspond with the arrangement of the elements in series by Newlands and Mendeljeeff, elements belonging to the same series having corresponding forms. The author suggested that simple geometrical forms—that is to say, the equilateral triangle and the square—were the combinations into which the primordial element would first have entered, and all the models were accordingly constructed out of these forms, along with the simple bar. Thus the atom of hydrogen was constructed of two single bars placed side by side, and the molecule of four, and he suggested that these were probably separated in the gaseous condition so as to form a hollow cube. There were other secondary forms constructed out of the triangles and squares, and the models of many of the elements were then constructed out of these secondary forms. Lithium was formed of two squares and two triangles, or fourteen pieces, its combining weight being 7. Carbon was formed by placing two pyramids base to base, each pyramid being formed of four equilateral triangles, in all twenty-four pieces, its combining number being 12. The crystalline forms, both of the diamond and of graphite, were shown to correspond with this, the former being made by placing a number of the carbon atoms together by their edges, and the latter by placing them in apposition by their triangular facets. The author suggested that probably metals combined with non-metals by lateral interpenetration, a salient angle of the former corresponding with a re-entrant angle of the latter; but that two non-metals combined by superposition, corresponding angles being applied one to the other. The union of boron with nitrogen at a high temperature was shown by reference to the models to be an illustration of this view. The compounds of oxygen with nitrogen and with chlorine were also discussed, and a corresponding explanation of them suggested. What is known as the nascent condition of elementary atoms was explained as consisting in a sliding movement between two atoms which had been combined, so that one of these was removed gradually from the other, while a third gradually replaced it by a similar sliding movement, the atom so removed necessarily entering into combination with a fourth.

THE AMINES PROCESS OF SEWAGE PURIFICATION.

A LARGE company of gentlemen, in response to the invitation of Mr. E. B. Ellice-Clark, M.I.C.E., assembled on Wednesday last at the Wimbledon Sewage Farm to inspect the method of purification of sewage, now being carried out there, and known as the Amines process. Amongst those present were the Lord Mayor, several members of the Main Drainage Committee of the London County Council, as well as many well-known civil engineers, chemists, medical officers of health, and others interested in sanitary matters. "No known process of precipitation purifies sufficiently," was the conclusion the late Royal Commission came to in 1884. Yet the elaborator of this process of precipitation, Mr. Wollheim, claims for it not only a clear effluent, but one absolutely free from all organisms and sterile. The actual process differs little in its working from other precipitation processes, so that it can easily be put in operation without much outlay at sewage works where such methods have been in use.

The pure sewage is pumped up, and by suitable contrivance definite quantities of milk of lime and herring brine are added to it. It is then allowed to flow over an agitator into settling tanks. Clarification rapidly takes place, and is usually complete in half an hour. The clear effluent, smelling of brine, is then run off, and more sewage, with a smaller proportion of lime and brine, is run in on top of the residual sludge. This process is repeated six or more times. The sludge is then allowed to gravitate into the filter press house, where it is pressed into "cake." Samples we took from the press possessed only a slight ammoniacal smell. In his address Mr. Ellice-Clark stated that the sludge, containing 90 per cent. moisture, may be thrown on the land without giving rise to any nuisance, even under conditions of weather most favourable to putrefaction. No claim was urged having regard to the practical use or value of the sludge.

Dr. Klein has examined (by inoculation on nutrient gelatine) both the sludge and the effluent. In the former he reports finding fewer organisms than are found in filtered river water supplied by the London companies, and in the latter absolutely no organisms at all. And, further, that when the effluent is diluted with water containing organisms actual decrease in the number takes place rather than increase. This disinfecting and antiseptic property of the material employed is assigned by the inventor to a gaseous reagent soluble in water, and evolved by the action of the milk of lime upon the herring brine, to which he has given the name "Aminol." As to cost, Mr. Wollheim states that it may be given in round numbers as ranging from a halfpenny to three farthings per thousand gallons of sewage treated, and in the case of London sewage, taking the daily flow at 130,000,000 gallons, the cost need not exceed £330 daily, equal to about £125,000 per annum, which means 7½*d.* per head of the population, or a rate below 1*d.* in the pound. Most of those present on Wednesday seemed to think favourably of the process. The local board of Wimbledon expressed their satisfaction with this treatment, which has been carried out now at their farm for the past two months.

We failed to detect anything of an objectionable character in or around the premises; and the process, apart from the novelty of its active agent, from which is derived its name, deserves to enlist the interest of all concerned in sanitary science.

THE HYDERABAD CHLOROFORM COMMISSION.

To the Editors of THE LANCET.

SIRS,—I am directed by his Highness the Nizam's Government to offer THE LANCET, as the leading medical journal, £1000 to send out a representative to repeat the experiments of the Hyderabad Chloroform Commission, and make any others with the Commission that you may suggest.

1. The Hyderabad Committee performed a series of experiments, of a clinical nature, on the effects of chloroform in dogs in 1888, and their conclusions were embodied in a report which was submitted to Government early this year.

2. The experiments of the Commission tend to prove that chloroform has no direct action upon the heart, and though it is hardly to be expected that their conclusions will be accepted as final by the whole of the medical profession, their work may be safely said to constitute an interesting addition to what is already known about chloroform.

3. The Nizam's Government has been advised that if the experiments are continued and amplified by the Hyderabad Commission, associated with a trained scientist, whose position and attainments will ensure the acceptance of his opinions by the profession, the subject might be threshed out thoroughly, and the question whether chloroform does or does not affect the heart directly, and other questions connected with it, might be settled once for all.

4. His Highness's Government therefore desires to offer £1000, a cheque for which is forwarded herewith to the Editors of THE LANCET, to send a representative to Hyderabad to repeat and continue the experiments of the Hyderabad Chloroform Commission, and make with them any others that THE LANCET chooses to suggest.

5. If his Highness's offer is accepted, the gentleman selected should take a return ticket by P. and O. *viâ* Brindisi for three months, to be extended if necessary, and he will be the guest of the Nizam's Government during his stay in Hyderabad.

6. The Hyderabad Commission undertake to place themselves entirely at his disposal and will act under his direction. The Commission will provide all instruments and appliances and everything which may be required for the experiments, and will, without bias, do all in their power to assist the representative of THE LANCET in arriving at the truth.

I have the honour to be, Sirs,

Your most obedient servant,

EDWARD LAWRIE,

Hyderabad, Aug. 18th, 1889. Surgeon-Major, Residency Surgeon.

THE LANCET.

LONDON: SATURDAY, SEPTEMBER 21, 1889.

AT the meeting of the British Association at Newcastle, just concluded, two addresses on biological subjects were delivered, one by Professor BURDON SANDERSON, the other by Professor TURNER, which claim a passing notice. It was much to be regretted that Professor BURDON SANDERSON was, in consequence of severe indisposition, unable to attend the meeting and deliver his own address. This duty in his unavoidable absence was undertaken by the Rev. Canon TRISTRAM. The theme on which Professor SANDERSON dilated was the Nature of Life, or, perhaps, to speak more correctly, the difficulties which at present stand in the way of giving any satisfactory explanation of the intimate nature of the vital processes and the quarter from which aid may be anticipated. The determination of the chemical and physical endowments of living matter in general, and of the several varieties of living matter which constitute the animal and plant organism, is, he pointed out, the first duty of the physiologist in particular. He must then ascertain how these processes are localised so as to constitute the special function of each structure and the relation between structure and process in each case. There can be little doubt that we must look to chemistry for the next steps in physiological inquiry. We owe an immense debt to the microscope, which has supplied information of extreme interest in regard to all the various organs of the body. But it is not by this means that we shall gain an insight into the nature of the intimate processes of nutrition, of the contractility of muscle, or of the excitability of nerve. Function, as Professor SANDERSON remarks, is more complicated than structure, and the result of proceeding, as physiologists commonly do, from structure to function must inevitably be to bring us face to face with functional differences which have no structural difference to explain them. In every instance the ultimate issue proves to be plurality of function with unity of structure, the unity being represented by a simple structural element, be it retinal cone or cell possessed of numerous endowments. The problems that may be regarded as most urgently demanding solution are those which relate to the endowments of apparently structureless living matter, and the problem of the future will be the analysis of these endowments. In order that it may be worked out, those cases should be selected in which the vital process offers itself in the simplest form, and is consequently most easy to understand, and then, following the fundamental principle of the correlation of structure with function, of mechanism with action, we may proceed to draw inferences as to the mechanism by which these vital processes are actually carried out. After further showing that living differed from non-living matter in undergoing constant change whilst remaining the same, Professor SANDERSON observed that it was this antithesis which constitutes the essential distinction between the two great branches of biology. Seen from the morphological side, the whole plant and animal kingdom constitutes the unfolding of a structural plan which was once latent in a form of living material of great apparent simplicity. From the physiological side this apparently simple material is seen to be capable of the discharge of functions of great complexity, and therefore must possess corresponding complexity of mechanism. It is the nature of this invisible mechanism that physiology thirsts to know. Each step in general science affords further and further insight into the nature of vital processes, and demonstrates that they are not essentially different from those with which we are already familiar. The chemical investigations of BLACK and CAVENDISH and LAVOISIER, for example, led to clear conceptions of the changes involved in respiration; the cell theory founded on the researches of SCHLEIDEN and SCHWANN and VIRCHOW gave an insight into the deeper processes of nutrition, which has been greatly extended by the modern conception of protoplasm; but we are still far from understanding the essential difference between a living and a non-living body, though Professor SANDERSON believes that such knowledge is approachable.

In selecting Heredity for the subject of his address to the Anthropological Section, Professor TURNER interested not only the small number of his hearers who are specially engaged in investigating the history of man, but a far larger audience who are interested in the observation and treatment of his diseases, as well as those who are engaged in the breeding and rearing of animals. Though the ancient doctrine, that the seed of the animal or plant contains the adult in miniature, has been dismissed, and we no longer believe that the spermatozoa are homunculi, a doctrine almost as incredible is now very generally accepted to the effect that the germ plasm is transmitted, with all its original forms and potentialities, from parent to child, and has been so transmitted for an indefinite period—in fact, since the origin of the human race. The cells possessing these extraordinary powers are, as a rule, separated from the rest of the cells of the body at an early period of its development. They take no part in the growth of the organism in which they arise, and the principal reason for their association with other cells of the body is that certain of the latter minister to their nutrition. For the production of a new animal or plant, it is necessary that a process of fusion should take place between two particles named respectively the male and female pronucleus; and this fusion has been demonstrated in very humble members of both kingdoms. As the new individual grows, the germ plasm again separates from the rest, bearing, as it were, the torch of life to the next generation. Each new individual is, however, endowed with the power or faculty of variability, enabling it to adapt itself, within certain limits, to the conditions by which it is surrounded, and these adaptations, if favourable to the life of the individual, are capable of hereditary transmission, and may then, in course of time, lead to the formation of new species; if unfavourable, they lead to its degeneration or extinction. Professor TURNER demonstrates that in some instances structural lesions are transmitted—such, for example, as defect of digits, hare-lip, colour-blindness, and deaf-mutism; whilst in others there is inherited a strong predisposition to disease, as is seen in cancer, tubercle, hæmophilia, and cataract. The structural changes which there is every reason to believe exist in the

germ plasm, and lead to structural defect or to particular tendencies and susceptibilities, are too recondite and delicate to permit of their being recognised; but it is not improbable that much light might be thrown upon this point by well-directed and carefully performed experiments upon the fertilised ova of the lower animals. It is still held by some physiologists that acquired characters cannot be transmitted from parent to offspring; but if this supposition were correct, it would follow, as Sir WILLIAM TURNER observes, that the primordial human germ plasm must have contained within itself an extraordinary potentiality of development—a potentiality so varied that all the multiform variations in physical structure, tendency to disease, temperament, and other characters and dispositions which have been exhibited by all the varieties and races of men who either now inhabit or at any period of the world's history have inhabited the earth must be included in it; and, still further, if it be true that all living beings have descended from a single cellular organism, this must have contained in its molecular constitution the potentiality of evolution into higher and more complex forms of life, a doctrine that requires much faith to accept. And there seems good reason for accepting Sir WILLIAM TURNER'S conclusion that somatogenic characters are transmitted and form an important factor in the production of hereditary characters.

IT will not be amiss to draw a few lessons from the prosecutions which have been so ably and successfully conducted at Birmingham against the quacks that infest that town. Birmingham would appear to have more than her share of such characters; but it can scarcely be supposed that she differs much in this respect from other towns where the same diseases and, alas! the same ignorance prevail. Venereal disease is too constant everywhere. Everywhere is the same dread of its consequences, affording a lucrative source of profit to the charlatan. Equally ubiquitous is the disposition to have it treated secretly and to believe anything in either the threats or the promises of the most audacious pretenders. Such prosecutions as that reported last week ought to enable the sufferers and the public generally to see that there is one thing almost more to be feared than these diseases—viz., the men who trade on them, and on those who fancy they suffer from them, with perfect indifference to anything but the extortion of money. The great proof of wisdom in men in regard to these diseases is in avoiding them altogether, and all the risks and sources of them, as the worst form of pestilence, and one entirely preventable. But the next greatest proof of wisdom is, when the disease has been contracted or there is any reasonable fear that it has been, to go at once to the medical man best known and most respected. Of all indiscretions, that is the greatest which leads a man with this disease to consult such quacks as these prosecutions have brought to light, who were ready to pronounce perfectly healthy men who consulted them to be "very ill," and "to need months of treatment," and still more ready to extort from them exorbitant fees for their impudent opinions and their quack medicines. There is no ear into which the confession of error and its consequences can be more fitly made than that of the medical man. It is his business at once to receive such communications and to give such advice as will curtail the mischief that may have arisen, to abate undue fear, and to facilitate the return to health and self-respect. He is of all men the one who can make the most allowance at the same time that he most powerfully dissuades from evil courses. We cannot forbear to notice the fact, shown by the prosperity of these pretenders, that while the working classes expect medical practitioners to treat them for small and inadequate sums, they are always ready to pay large charges for quack medicines and to quack practitioners. The more bold and audacious the pretenders are, and the higher they appraise themselves and their medicines, the more easy does it seem for them to exact heavy fees from people who would be shocked by a general practitioner asking them half-a-crown or five shillings for advice.

It is worth while to notice a few of the legal points that cropped up in these cases. Dr. ROGERS had his case well in hand, and was ready with all points. He was clear in his own mind at least as to the legal grounds on which to base a claim for conviction, and at times most effective and humorous in his examination of witnesses. The defendants were charged generally with falsely holding themselves out as legally qualified practitioners in medicine and surgery. CHARLES FREDERIC GROOM, of 44, Great Charles-street, was charged specially with falsely using the title of a Member of the Royal College of Surgeons. Mr. TRIMMER was in court, and gave evidence that in October last he had communicated to GROOM the resolution of the College of Surgeons withdrawing his diploma on account of an objectionable pamphlet, and requiring him to return his diploma, which he had not done. Dr. ROGERS contended that no person was entitled to represent himself as legally qualified unless he was registered—as GROOM'S counsel admitted he was not. Dr. ROGERS quoted Baron POLLOCK as laying down that if even a properly qualified medical man took the title of "Doctor" without being legally entitled to do so he infringed the law, and argued that an unqualified man who took such a title must be a much greater sinner. Not only did GROOM call himself "surgeon" and "Dr. GROOM," but JOHN MARSTON, a carriage builder, called himself "Dr. HUNTER," and JESSE KEY called himself "Dr. CURTIS." KEY had been convicted thirteen years since for illegally practising. The defence was hollow throughout. Mr. VACHELL, on behalf of GROOM, asked how he was to know that he had been struck off, seeing the College met with closed doors, and it could not be proved that the communication announcing his being struck off the roll had reached him. On behalf of MARSTON, the coach builder, Mr. VACHELL alleged his possession of a Philadelphia degree, as if it were not notorious that the University of Philadelphia had been deprived of its charter for the disgraceful sale of all sorts of degrees. There was, in fact, no defence, and the stipendiary magistrate, Mr. HILL, convicted all three "for falsely using the title of 'Doctor.'" The magistrate granted a case on each conviction, but we have not much fear of any reversal of his decision.

We cannot leave these prosecutions without a word of praise for the Medical Defence Union, to whose energy and public spirit we owe the successful results. It is a matter for painful surprise that the public authorities of such an

enlightened municipality as Birmingham should allow such pestilential quackery to flourish in its midst, where there is law so easily available, if only the authorities would take a little trouble or empower the police to do so. It is disappointing that the College of Surgeons, which did so well in withdrawing GROOM'S diploma, did not follow up their action by prosecuting him for still using the title after being deprived of the membership on which it was based. It ought not to have been left to the Medical Defence Union to vindicate the sanctity of medical titles, and to prosecute the most pernicious of public and advertising quacks. The public and the medical corporations should combine to save the community from such pests and the profession from such disagreeable duties. Let us hope that a few such prosecutions, with all their disclosures of fraud and imposture, will stimulate them to do their duty. Meantime society owes a deep debt of gratitude to the Medical Defence Union, which, created for strictly medical defence purposes, has thus gone out of its way to do a great public service by exposing a great public evil.

ACUTE INFLAMMATION of the peritoneum arises under so many conditions that the study of its pathogeny would, it might be thought, be of especial value in determining the nature of the inflammatory process in general. One must welcome, then, any fresh contribution to the subject which, in view of its frequency and importance, has not perhaps been so thoroughly investigated as many far less valuable questions. Such a contribution is afforded in the current issue of *Virchow's Archiv* (Band 117, Heft 3) by Dr. PAWLOWSKY of St. Petersburg, who relates in detail a long series of experiments conducted by him in Professor ROSENBACH'S laboratory at Göttingen—experiments which go a considerable way to clear up many of the difficulties that surround this subject. It may be well, before adverting to his results, to follow him in his opening survey of the work hitherto done in this line of inquiry. He reminds us that in 1877 WEGNER published a series of researches upon the functions and action of the peritoneum, which were a distinct advance on the knowledge available up to that time, but the importance of which has been to some extent overlooked. WEGNER'S experiments largely consisted in noting the effects of the injection of air and of fluids of various kinds into the peritoneal cavity. He demonstrated that many such injections were quite innocuous, the material being rapidly absorbed without producing the slightest evidence of irritation of the serous membrane; and he also showed how rapidly peritoneal wounds healed. He found, too—and this before the real significance of pyogenic organisms was clearly understood,—that even in the case of fluids containing putrefactive bacteria the result depended apparently upon the amount of fluid injected, small quantities being absorbed without ill effects. At the same time he clearly conceived the notion that cases of rapidly fatal peritonitis, where death was often attributed to "shock," were really examples of general septic poisoning due to the absorptive powers of the peritoneal sac; and further believed that the fatal issue of acute suppurative peritonitis was owing to a similar blood-poisoning. There can now be no question that the reason for the immunity enjoyed by the peritoneum from the effects of certain of the fluids with which he experimented was due to the fact that they were devoid of any pathogenic organisms. GRAWITZ, who ten years later (1886) also made an experimental study of peritonitis, arrived at the conclusion that the serous membrane itself must be first injured or altered before general purulent inflammation could be excited by the injection of pyogenic organisms. WEGNER dwelt more upon the conditions of the peritoneum as a cavity into which fluid could be poured out, and from which it could be absorbed. GRAWITZ, on the other hand, directed especial attention to the wall of the cavity and its maintenance in a state of integrity. MIKULICZ, at the Berlin Surgical Congress in 1887, related experiments upon perforative peritonitis, and found that subsequent washing out the cavity with either carbolic or sublimate solutions was of no avail, whilst similar treatment with boracic or salicylic acids resulted in saving 50 per cent. of the animals in whom peritonitis had been so excited. But what was the nature of the poison derived from the intestine in such cases that had the power of exciting peritonitis, or why it was that carbolic acid and corrosive sublimate failed to arrest the process, were matters still left *sub judice*.

The question of experimental peritonitis had, then, reached this stage when PAWLOWSKY determined to carry it further. He planned a number of experiments to observe the effects of the action (1) of chemical agents, (2) of microbes, (3) of the intestinal contents, and (4) of combined chemical agents and microbes upon the peritoneum. The experiments were all conducted with strict observance of aseptic rules, and great care to avoid injury to viscera by the injecting syringe. The "chemical irritants" employed comprised croton oil, trypsin, and the products of two well-defined pathogenic organisms—staphylococcus aureus and streptococcus erysipelatis. One fact was clearly established—viz., that the infective forms of peritonitis were vastly favoured by the previous irritation of the membrane by chemical agents, thus confirming the proposition advanced by GRAWITZ. But the great merit of PAWLOWSKY'S work lies in the differentiation of the types of inflammation produced in these various ways. The peritonitis excited by the injection of the above-named chemical substances was invariably hæmorrhagic — never purulent; and side by side with this fact was the entire absence of microbes in the peritoneal exudation. Even in cases where the inflammation had been most severe, there was no lesion of the intestinal walls, no penetration of micro-organisms into the peritoneal cavity, no trace of suppuration. But when—as in some instances—the post-mortem examination was deferred beyond two hours after the death of the animal, then microbes could be detected in the peritoneal fluids, showing that (even before putrefaction had set in) these organisms could penetrate the dead but not the living tissues. The experiments with injections of cultures of micro-organisms fell under three series. In the first, non-pathogenic microbes were employed, without any result. Then the staphylococcus aureus, as the most typical and virulent of pyogenic organisms, was injected in varying quantities, and found to be highly provocative of peritonitis, even when administered in minute amounts. In the most severe cases death ensued within twenty-four hours, and the peritoneum showed hæmorrhagic and fibrinous exudation, with perhaps some admixture of

"catarrhal" cells, evidently indicative of commencing suppuration, which advanced to a greater degree the longer the animal survived. Experiments were also made with bacillus pyocyaneus, held by many to be non-pathogenic, and it was found to be almost as pyogenic as the staphylococcus. The conclusions from these experiments, which illustrated infection of the peritoneum from without, point to no less than four types of peritonitis being so induced: viz., (*a*) the mycotic form, the most severe and rapidly fatal, where the membrane is coated in places with a scanty mucoid exudation, consisting mainly of bacterial colonies; (*b*) hæmorrhagic exudation with more or less admixture of pus and microbes; (*c*) a fibrino-purulent form, obviously due to less intense infection, and marking the commencement of suppuration; and (*d*) typical purulent peritonitis, which is most markedly attained by the combined action of mechanical and chemical irritation, and the presence of pyogenic microbes in such amount as to produce comparatively slight general infection, and therefore to permit of the longer survival of the animal. Another series of experiments was concerned with the etiology of perforative peritonitis, and with this object injections into the cavity were made of filtered and unfiltered or diluted intestinal contents. The main results were that similar varieties could be produced by this mode of infection from within (i.e., intestine), as in infection from external sources, according to the amount and quality of the material introduced. Apparently microbes play an important part here also, but the precise micro-organism responsible for the inflammation in man has not been determined. In the rabbit, PAWLOWSKY isolated a bacillus from the intestinal contents, which was doubtless the cause of the peritonitis. It may be gathered, therefore, from his research that general acute peritonitis, which tends to become, or, owing to the survival of the microbe for a sufficient period, does become purulent, is invariably due to the presence of microbes which may be introduced into the cavity from sources external to the body, from the intestinal canal, or from some local source of infection elsewhere in the body. Also that the operation of these bacteria is favoured by associated irritation of mechanical or chemical nature, which *per se* induces hæmorrhagic but never purulent exudation.

PAWLOWSKY refers also to another interesting point in the history of acute peritonitis—viz., the frequent association with it of splenic tumefaction and of pleurisy. In explanation of these concomitants he reminds us that the peritoneum is a large lymph sac, and that its wall is furnished with stomata opening into the surrounding lymphatics; that there is thus an almost direct connexion between the pleura and the peritoneum, and also between the latter and the lymph space of the spleen, through its capsule; that a path of invasion of these parts by the peritonitic microbes is thus open; and that the presence of such microbes in the spleen leads to its reactive hyperplasia. As to the cause of the fatality of acute peritonitis, it is, on this microbic doctrine, due to general infection. If the virus be of small amount, it is conceivable for it to be absorbed into the thoracic duct, carried away in the circulation, destroyed and excreted as is the case with simple exudations; but if it be of greater amount or virulence the microbes will be found accumulating around the stomata, which they soon occlude, and then, multiplying in the peritoneum, produce purulent effusion, besides increasing the danger of general sepsis. The practical inference from such considerations is that *early* laparotomy is indicated in every case of infective peritonitis, but there yet remain points as to the etiology and treatment of the disease (especially that due to intestinal perforation) that await inquiry.

A SOMEWHAT important case, involving a question as to the proper interpretation of Section 126 of the Public Health Act (1875), came before the Malling Petty Sessions last week. The section imposes a penalty on exposure of infected persons and things, such penalty being incurred by any person who "gives, lends, sells, transmits, or exposes, without previous disinfection, any bedding, clothing, rags, or other things which have been exposed to infection"; and in pursuance of this provision the rural sanitary authority of Maidstone summoned a parent whose children were alleged, whilst affected with scarlet fever in its desquamative stage, to have been engaged in an orchard gathering currants which were subsequently transmitted to London. Mr. BUTTERFIELD was present as medical witness on behalf of the authority, but the details of the case were not gone into, on the ground, taken by the magistrates, that it was very doubtful whether fruit was so far *ejusdem generis* with the other articles named in the section as to be properly included in the term "other things." On behalf of the sanitary authority it was contended that this term included everything in the "wide, wide world" that could be shown to be capable of conveying the infection; but the magistrates evidently felt that, even with the aid of expert medical evidence, they could not undertake to decide whether fruit carries infection or not; and although they showed their sympathy with the sanitary authority by refusing to allow the defendant's costs and by stating that cases of this kind should be brought under the notice of the Legislature, yet they decided that they had no jurisdiction.

We imagine that there are conditions of fruit gathering which can leave but little doubt as to the danger of conveying particles of scarlatinal epithelium from fruit gatherer to fruit consumer, although it might be extremely difficult to prove, in an individual case, that any special parcel of fruit was actually thus infected, or was the actual cause of any case of scarlatina. But, in all probability, the magistrates may have been influenced in their decision as to the meaning of the term "other things" by the absence of any well-known cases in which fruit has conveyed infection, whilst the other articles named in the section are recognised carriers of the specific contagia. The point deserves to be carefully borne in mind by medical officers of health and others in cases of scarlatina or other diseases having an obscure origin. We only recall one instance in which the matter has come under any detailed investigation, and in the brief account of it given in the *Practitioner* (July, 1883) it is admitted that whilst "the employment as strawberry gatherers of persons in the desquamative stage of scarlet fever" came under suspicion, yet the case was complicated by the circumstance that those who consumed the strawberries and who subsequently contracted scarlatina had mixed the fruit with a cream which could not be exonerated from a share in the suspicion as to the source of the infection.

Annotations.

"Ne quid nimis."

"THE LANCET" AND THE HYDERABAD CHLOROFORM COMMISSION.

ON another page we print Surgeon-Major Lawrie's letter containing details of His Highness the Nizam of Hyderabad's offer to place at the disposal of THE LANCET, as the leading medical journal, the sum of £1000 to send out a representative to repeat the experiments of the Hyderabad Chloroform Commission, and to make any others that we may suggest. This offer we have cheerfully accepted. There are many young men of great ability and thorough scientific training who could have done this work exceedingly well, but in accordance with the Nizam's desire that we should select a man who is not only a trained scientist, but one whose position and attainments will ensure the acceptance of his opinions by the profession, we have requested Dr. Lauder Brunton, F.R.S, to act as our representative, and he has consented to set out for Hyderabad on Oct. 4th, which is the earliest possible opportunity. Dr. Lauder Brunton has not only devoted much time to pharmacological work for more than twenty years, his first contribution on the action of nitrite of amyl having appeared in our columns in 1867; but the fact that his large work on "Pharmacology and Therapeutics," which appears also in an American edition, has been translated into French, and is now being translated into German, Italian, and Spanish, shows that he is regarded as an authority in other countries as well as our own. It may perhaps be considered as a farther advantage that in this work Dr. Lauder Brunton has very decidedly stated that one of the dangers resulting from chloroform is death by stoppage of the heart. "Audi alteram partem" is the motto of an important section of THE LANCET; and we think that by getting both opinions regarding the effect of chloroform on the heart represented on the Commission, as they will be by Dr. Lauder Brunton and Surgeon-Major Lawrie, we are more likely to obtain a correct conclusion. The question whether chloroform paralyses the heart or not is one of the greatest possible practical importance, for upon its correct solution the lives of thousands of people and the happiness of thousands of families may depend. Both in Europe and America clinical experience and physiological experiments have led to the conclusion that it has a paralysing action on the heart, while ether exerts such an action in a very minor degree, if at all. In consequence of this, ether is now largely used in this country as well as in America for producing anæsthesia in surgical operations, in spite of the greater pleasantness and convenience of chloroform. It is almost impossible to believe that the conclusion at which European and American surgeons and scientists have arrived is, after all, destitute of foundation, and little better than an idle dream. When we find, then, that Dr. Lawrie and the Nizam's Commission have arrived at an entirely opposite conclusion, it is natural that we should hesitate to accept it. A consideration of the report of the Commission appears to show that the number of experiments performed was not only large, but the results were so uniform that the conclusion arrived at—viz., that chloroform does not paralyse the heart, but kills by stopping the respiration—may fairly be taken as correct for the animals experimented on, and for the conditions under which the experiments were performed. But if we grant this we are at once confronted by the next problem: Why do the results of the Nizam's Commission differ from those of European and American investigators? Is it because the experiments in India were carried on in a warmer climate? Or is it because the animals experimented on were peculiarly resistant to the action of chloroform? These questions can only be answered by further experiments, which can hardly fail to be of practical utility, even if they afford only a partial solution of the problem. For Surgeon-Major Lawrie states in his letter, which appeared in our issue of May 11th, that the results of the experiments carried out by the Commission tallied exactly with his own experience. In the correspondence which occurred on the subject in THE LANCET some writers agreed with Dr. Lawrie, while others supported the opposite view. We may perhaps fairly call these two views those of the Edinburgh and London schools. In the Scotch capital failure of respiration is regarded as the chief or only danger, while in the metropolis failure of the heart is more feared. It is quite possible that the surgeons in both cities are right, and that the habits or mode of living of the people may lead to differences in the resisting power of the cardiac or respiratory apparatus respectively. The proportion of gouty patients is much larger in London than in Edinburgh, and when we consider that the natives of India appear to resemble the Scotch in their comparative immunity from cardiac paralysis by chloroform, it will be advisable for the Commission to ascertain, if possible, what the conditions are which enable the heart either in dogs or men to resist the power of chloroform or which lead to its stoppage during the administration of the drug. It may not be possible to work out completely all the questions which may arise, but if the Hyderabad Commission, with the aid of Dr. Lauder Brunton, can settle definitely the question whether chloroform does or does not affect the heart directly, a most important practical object will have been attained by means of the Nizam's generous offer.

COMPETITIVE EXAMINATIONS.

AT the meeting of the British Association on the 12th inst. Mr. Francis Galton brought under the consideration of the Anthropological Section the important question of physical qualifications as an element in deciding the relative position of the candidates for appointments in the public service. It appears that some years ago a joint committee of the Civil Service Commissioners and War Office drew up a scheme of competition for admission to Woolwich and Sandhurst, in which the physique of the candidate received a fair amount of consideration. For some reason, which is not stated, this scheme was not brought into operation. Recently, the Commissioners appear to have again suggested the expediency of some such measure, but were informed that "the military authorities did not think it necessary to introduce such a competition, being completely satisfied with the physique of the young men who came to them through our examinations." We cannot but think that the military authorities—presumably the Commander-in-Chief and Adjutant-General—have committed a grave error in this decision. There can be no question that for service in the Army, the Navy, and the Indian Services a good physical development is, if not an absolute necessity, at least a great additional qualification for efficiency. It may be true that, under the present system, no deficiency in this respect has been experienced; but if so, this has probably been a result of the care exercised by the medical officers on whom the duty of inspection of the candidates has devolved. The importance of securing for these services men who are well qualified, physically as well as mentally, for the hard work which is often required of them, must be obvious, and it seems desirable from that point of view that a certain standard of fitness should be required, and that such qualities should be considered in judging of the relative fitness of the candidates. The result of a literary examination affords no evidence of physical fitness, for it has been found at Cambridge that among high-honours men, low-honour men, and men who took an ordinary pass

degree, the average physical efficiency was almost exactly the same. With a slight exception as to eyesight, "they were alike throughout; alike in their average bodily efficiency, and alike in the frequency with which different degrees of bodily efficiency were distributed among them." This being the case, Mr. Galton contends that when two candidates are almost on a par intellectually a certain weight should be given to physical superiority. One probable result of such a rule would be that more attention would be paid to the health and physical development of intending candidates, and the number of instances of broken health from over-pressure under the cramming system would be materially reduced. We believe, also, that it would considerably improve the efficiency of the services to which it was applied. Mr. Galton "entertains no doubt that if the reasonableness and feasibility of the proposed reform were widely understood, a loud demand would arise from many sides, and without arousing any opposition worth regarding, for the introduction of so salutary a measure." Mr. Galton explained the proposed system by which this could be easily carried out, and he is supported by the Civil Service Commissioners in the opinion that there would be no more difficulty in determining the relative physical capabilities of the candidates than is now experienced in the literary examination. We think the suggestion well deserves the careful consideration of the authorities, and that if judiciously brought into operation it would be productive of very beneficial results.

THE EPIDEMIC OF SCARLET FEVER IN PLYMOUTH.

SCARLET FEVER of an exceptionally fatal epidemic character has prevailed in Plymouth for nearly five months, and shows even now a tendency rather to increase than to decline. More than two months ago we called attention to the severity of the outbreak. We also pointed out that there was no legal notification of zymotic disease in the town; that, although the borough possessed an isolation hospital, there appeared to be no serious attempt to turn it to account, inasmuch as only one death had occurred in the hospital up to the end of the first week in July, although 51 deaths from scarlet fever had been recorded within the borough since the beginning of the year. During the ten weeks that have elapsed since July 6th, no fewer than 90 more deaths from this disease have occurred in the borough, making 141 since the beginning of the year, all but 3 of which have been recorded since the middle of April, soon after which the disease assumed an epidemic character. During the second quarter of this year scarlet-fever mortality was more than ten times greater in Plymouth than in the twenty-seven other great towns, the annual rate being equal to 2·21 per 1000 of the estimated population; during the eleven weeks ending last Saturday the annual rate from the disease in the borough was equal to no less than 5·8 per 1000. So remarkably fatal an epidemic of scarlet fever has not occurred in any of the twenty-eight great towns dealt with in the Registrar-General's Weekly Return since the memorable outbreak in Portsmouth in 1877. The responsibility of the Town Council of Plymouth, as the local urban sanitary authority, in the face of such an epidemic, is so heavy that we hope we are misinformed as to the statement that only four deaths have been recorded in the isolation hospital of the borough since the outbreak of the present epidemic. As we remarked more than two months ago, the local sanitary authority is seriously handicapped in having no legal system of disease notification in force in the borough; but it is difficult to acquit the authority of apathy in having neglected to turn to practical account their isolation hospital. Until the passing of the recent Act there was no system of notification in operation in London; and yet 43·8 per cent. of the deaths from scarlet fever in the metropolis during last year were recorded in hospital, whereas, if our information is correct, only 2 per cent. of the deaths in Plymouth in the present epidemic have been so recorded. It is noteworthy that Plymouth is one of those large towns which has not yet recognised the importance of appointing a medical officer of health, who, debarred from private practice, should devote his whole time to public health service.

DIAGNOSIS OF CEREBRO-SPINAL MENINGITIS BY PUNCTURE OF THE LIVER.

DR. C. BOZZOLO reports in *La Riforma Medica* an interesting case of cerebro-spinal meningitis, in which the diagnosis was assisted by bacteriological observations made on the fluid obtained by puncturing the liver. A man aged fifty-four, who had been ill for five days previously, was admitted into the clinic at Turin suffering from feverishness, pain in the right side of the neck, jaundice, enlargement of the spleen, painful enlargement of the liver, bronchitis, and albuminuria. A rigor occurred more than once. Except the pain in the neck and vomiting, no symptom whatever of meningitis existed. Six days after admission the patient died, having been slightly delirious for the previous forty-eight hours. Diagnosis being difficult, the author had on the fourth day after admission made an exploratory puncture of the liver, which was still painful. The blood extracted showed by cultivation and after experiments on animals the existence in it of Fraenkel's diplococcus of pneumonia. This result, in the absence of pneumonic and pleuritic symptoms, with the existing pains in the neck and vomiting, encouraged Bozzolo to diagnose meningitis, a diagnosis which was confirmed by the post-mortem examination. In addition to the morbid changes in the meninges, gall-stones and acute endocarditis were found.

THE USE AND ABUSE OF ICED DRINKS.

ICES and iced drinks have come to be taken so commonly and as a rule without obvious ill-effects that one is hardly prepared for the fatal consequences which in certain cases appear to follow this form of indulgence. The latest recorded instance of death from this cause occurred quite recently in Paris, where Mr. Ira Paine, a well-known American marksman, is said to have succumbed to the effects of drinking two glasses of iced beer. In order to understand the rational method of such an accident we need only recall the consequences of applying cold to other regions—namely, temporary suspension and subsequent excess of the vital processes, chiefly those of the circulation. There is a chill anæmia followed by local congestion—that is to say, the same changes in varying degree that we find occurring in a limb after frost-bite. As in the latter condition, also, we may expect the tendencies and processes of disease to be modified by circumstances. Increase of age, arterial rigidity, fatigue of the circulatory apparatus, the quantity and quality of blood in the vessels, the amount of ice, and the suddenness with which it is taken, are all accordingly matters of importance in this connexion. At any time the avoidance of undue chill to the gastric mucous membrane is the first consideration. It therefore becomes intelligible why the safe consumption of ice stands in a direct ratio to the vigour of the general and especially the gastric vascular tone, to gradual and moderate ice consumption, and to the freedom of circulation in the stomach. This reasoning explains the comparative tolerance of ice in young persons, its usually harmless effect when taken during digestion of a substantial meal, and its utility in sthenic fevers, where the blood-flow is everywhere active. It likewise justifies

the prudent custom of sipping iced fluids, through a straw for example, thus leaving time for the mucous membrane to recruit its vascular tone at frequent intervals. The habit of quaffing iced beverages in large quantities, as the case we have quoted proves, is by no means free of risk; nor, we may add, is that, so common at evening entertainments, of swallowing ices without other refreshment.

DEFORMITIES OF THE JAWS AND TEETH IN IDIOTS AND OTHERS.

THE association of the V- and saddle-shaped jaw with idiocy has been frequently pointed out in papers such as those of Cartwright, Oakley Coles, Ireland, and Langdon Down; but, according to the statistics of Dr. Talbot of Chicago, these are not the only forms of irregularity met with, nor is it true that idiots present the most aggravated deformities of jaws and teeth. In his tables he excludes those deviations from the normal which might be considered due to a local cause, and only takes those of constitutional and developmental origin. The subdivisions comprise large jaw, protrusion of lower jaw, protrusion of upper jaw, high arch, V-shaped arch, thumb-sucking, saddle-shaped arch, and small teeth. Of nearly 2000 cases examined in idiot asylums, almost one-half of the whole number had irregularities of the jaws and teeth, whereas in 1000 cases of healthy children only 22 per cent. suffered in this way. Next, taking 2000 cases of deaf and dumb persons, 45·3 per cent. presented oral deformities, and of a small number of cases in asylums for the blind there were 50 per cent. Examinations of the mouths of 700 insane patients revealed the fact that only about 12 per cent. were irregular, and these were among cases of the congenitally insane, or those who had become insane early in life. Dr. Talbot observes that there has been brought forward evidence to show that when idiocy appears in a family other members may be found scrofulous, deaf, dumb, blind, or insane, showing that the conditions indicating neurotic tendencies have been transmitted through generations; and while specialists have generally recognised only one common feature—a very low grade of cerebral development—his investigations concerning the osseous system in its relations to the irregularities of the jaw and teeth show a lesion common to all those conditions. The small percentage of deformities in the insane examined is due to the fact that, with few exceptions, insanity does not appear in the individual until the skeleton has attained its normal development. Further details will be found in the July number of *The Dental Cosmos* (Philadelphia).

FATALITY IN A MIDWIFE'S PRACTICE.

MR. WYNNE BAXTER investigated at the Town Hall, Limehouse, the circumstances of the death of Eleanor Bumforth, who was confined on Sunday, Sept. 8th, became ill with diarrhœa &c. on Wednesday, Sept. 11th, and died on Friday, Sept. 13th. She was the daughter of a midwife, who said that she did not deliver her daughter, though it was admitted that she came and examined her, and, according to the evidence of Mr. Talbot, remained with her for about an hour. The serious part of the investigation was the tracing of six cases of death in childbed from about July 24th, all of which had been attended more or less by the midwife. On July 24th she attended Mrs. Sparrow, Copenhagen-street. She died. A medical practitioner was called in, and told the midwife she ought not to go out for a fortnight. But she attended Mrs. Ward on Aug. 1st, who complained the following day of pain in the stomach and vomiting, and died on Aug. 5th; and so on with other cases all remarkably alike. There was an inquest on Mrs. Ward, at which the midwife was warned by the coroner to desist at least a fortnight. Mr. Talbot, who was called to the last case, attributed the cases to some constitutional fault in the midwife, who had diseased bone in the mouth. The only notice of the fatalities and of the various warnings which she took was to wash her clothes in Condy's fluid and go away for a week from August 7th. When a patient sent for her on the 14th she replied that she ought not to go; but the patient saying that she had no fear, as people had to die when their time came and not before, she went. In the end the coroner spoke very gravely to her, and said that if she attended a case within three months he would have her committed for manslaughter. It must be admitted that he dealt leniently with her, and that her conduct was exceedingly blamable. One of our contemporaries heads the inquest "A Strange Epidemic in Limehouse." But there is really nothing strange about it but the persistence of the woman in going about spreading disease after both the coroner and at least two medical men had fully warned her. It is one more and very sad illustration of the state of midwives' midwifery. It is discreditable to the Home Office that legislation is so long delayed insisting on some proofs of education and intelligence in midwives. Until such legislation is earnestly set about, we must consider our legislators as much to blame as the ignorant women who think to disinfect their persons by merely washing their clothes in Condy's fluid. One of our contemporaries seems anxious about doctors and their personal disinfection. We can assure it that the disinfection of obstetricians has become one of the fine arts, and has reached such perfection that even in Lying-in Hospitals septic mortality is almost abolished. The difference between a medical man and a midwife is that the one is educated and the other is not, and that he is quick to recognise any indications of sepsis, and to deal with them *secundum artem*. It is gratifying to know that with very little intelligent trouble this risk of midwifery may be abolished. And every obstetric practitioner, male or female, should regard the abolition as one of the prime duties of practice, at whatever personal inconvenience.

UNUSUAL MODE OF SUICIDE.

ON the 28th of August an inquest was held at Lincoln on the body of a woman, aged thirty-eight, who had been found dead in her room early that morning. The medical man who was first called in found the woman lying on the floor, apparently dead; blood had flowed from the nose and mouth, and there was much blood about the room, especially on the carpet. Examination of the mouth revealed the presence of the sharp broken end of a hand mirror, which was just within reach of the forefinger, was about four inches in length, and was removed with some difficulty. A hand looking-glass had been found on the dressing-table; this was spotted with blood, and the handle had been broken off close to the mirror. At the post-mortem examination a sharp piece of wood, about two inches in length, was found lying between the posterior wall of the œsophagus and the cervical spine; this fitted the mirror and the broken handle previously removed. There was an opening in the lower part of the pharynx near the commencement of the œsophagus, through which the wood had penetrated, and some of the muscles in front of the spine were lacerated. Death was ascribed to suffocation by pressure of the foreign body on the larynx. It was supposed that suicide had been committed by the deceased whilst under the early effects of opium poisoning, that she had forced the mirror handle foremost into the mouth, and that it had broken at the junction of the handle and mirror. From the description of the broken handle, and the way in which it was splintered and impacted in the pharynx, the idea is suggested that the woman might have held it in her mouth and fallen forward on the floor, thus driving it forcibly against the spine, and

causing the point of the handle to run downwards in front of the cervical vertebræ. It is difficult to imagine anyone of sufficient strength and determination to produce the result described without some such assistance. The finding of the mirror on the dressing-table lends support to the view given in the medical evidence, but does not disprove the other supposition—either implies great determination on the part of the woman. Almost all the injuries causing perforation of the pharynx, excluding gunshot wounds, have been produced by a person falling forward on the ground and so forcing a pipe or similar thing into the mouth, or a blow has been struck by someone and a similar result produced, the blow having struck the foreign body and forced it backwards.

CENTENARIANISM IN IRELAND.

THE Registrar-General of Ireland, in his twenty-fifth annual report, which has just been issued, states that the deaths registered during the year 1888 included no fewer than 208 of persons stated to have been aged upwards of one hundred years at the time of their decease; this number included 87 males and 121 females. Such statements in the Death Register would not, if uncorroborated, inspire much confidence, bearing in mind the usual result of the investigation of similar statements in all parts of the world. Dr. Grimshaw, however, proceeds to state that, "further inquiry having been made, it was ascertained that the ages of the centenarians as given in the records were in every case confirmed." Such an unwonted result of the investigation of claims to centenarianism deserves fuller notice. It would have been interesting to know the precise nature of the investigation, and of the evidence accepted as confirming the accuracy of the statement in the Death Register; also the precise stated age of each of these 208 centenarians might well have been placed on record. The English report for 1888 has not yet been issued, but it is worth noting that in 1887 the deaths of only 60 reputed centenarians were registered in England and Wales, little more than 2 per million of the estimated living population. In Ireland, however, the deaths of centenarians in 1888 were, Dr. Grimshaw reports, 208, and thus more than 43 per million of the population! This is certainly a startling announcement. It may be pointed out that the numbers of centenarians in the two sexes show an unwonted equality in Ireland, being in the proportion of 1·4 females to 1 male; whereas in England and Wales the proportion in 1887 was 3·6 females to 1 male. Measured by their proportion to the deaths of persons aged upwards of seventy-five years, the Irish figures suggest further evidence of untrustworthiness. The Irish report for 1888 records the deaths of 16,611 persons aged upwards of seventy-five years; the 208 reputed centenarians were therefore equal to 12·5 per 1000 of those who died above the age of seventy-five years. If we measure the 60 reputed centenarians in England and Wales in 1887 in the same manner, we find that they were equal to only 1·1 per 1000 of the recorded deaths of persons aged upwards of seventy-five years. We are faced, therefore, with two alternatives. Either we must believe that of persons aged upwards of seventy-five years more than twelve times as many attain the age of one hundred years in Ireland as in England, or we must decline to accept as trustworthy the statement of the Registrar-General of Ireland that 208 undoubted centenarians died in that country during last year. Indeed, further ground for doubting the accuracy of the Registrar-General's report as to Irish centenarianism is afforded by the fact that the death-rate in Ireland among persons aged upwards of sixty-five years (stated by Dr. Grimshaw to have been 97·0 per 1000 in 1888) has in recent years somewhat exceeded that which has prevailed in England and Wales. If the mean death-rate among persons aged upwards of sixty-five years is higher in Ireland than in England, there is the best ground for disbelieving that the proportion of survivors to the age of one hundred years is larger in Ireland than in England.

INTESTINAL OBSTRUCTION.

DR. GELPKE reports in the *Correspondenzblätter für Schweizer Aerzte* four cases of intestinal obstruction, of which two had been operated on, one with success, and two had been successfully treated with metallic mercury. From these cases he concludes that quicksilver is a valuable remedy in cases of obstruction, and that the metal seems to be quite innocuous to the system if not too long retained. It had been so retained in one of the two cases in which four teaspoonfuls of quicksilver had been given, and the fæces and urine of the patient contained the drug for twelve weeks; there were other distinct symptoms of mercurial poisoning, such as great emaciation, excitement, loss of hair, and some stomatitis. The other patient, on the contrary, showed no signs of mercurialism whatever. He considers that in hernia it is generally advisable to commence the abdominal section from the orifice of the sac. Finally, considering the uncertain and not very successful results of laparotomy, he would not operate before other means, such as quicksilver, have been tried for from four to six days.

Dr. S. V. Reitz, in the *Centralblatt für Chirurgie*, reports the case of a labourer suffering from obstruction of the bowels, who, after three days' fruitless administration of purgatives, was brought to the hospital. Fæcal vomiting was present, and a tumour could be felt on the left side of the umbilicus. Enemata of water by the long tube, though as much as six pounds of water were injected, were unsuccessful, but the vomiting and sickness improved under repeated washing out of the stomach. The next day the patient was considerably worse, and fæcal vomiting returned, with cold perspiration, restlessness, meteorismus, a pulse of 120, and a temperature of 100°. After the enema with the long tube had been again used, and the stomach repeatedly washed out, without any improvement, seven drachms of bicarbonate of soda in five ounces of water were injected into the rectum, followed by three drachms of tartaric acid in the same amount of water, and the anus closed. The patient, who was on his knees and elbows, complained at once of severe abdominal pains, and in five minutes the injection came away with exceedingly offensive flatus. Shortly afterwards the patient felt considerably better. In three hours the enema was repeated with half the previous doses, and was shortly followed by a large loose motion, and by a second later on. The patient completely recovered.

VACCINATION MEMORANDA.

AMONGST the papers contributed last year to the Australian Association for the Advancement of Science is one by Dr. Ashburton Thompson on the classification of persons who have been exposed to the infection of small-pox, so as to show the relation between the incidence of the disease and different degrees of protection by vaccination or by a former attack of small-pox. After explaining at some length the principle of the method of classification adopted, an analysis is given of the state as to vaccination of, and the incidence of small-pox upon, the 312 passengers who were landed in 1886 at the quarantine station, Port Jackson, from the steamship *Preussen*, on which small-pox had taken place. Of 19 persons who were unvaccinated, 4 only escaped, the percentage of attacks being 78·9, and the rate of fatality being 60 per cent. of attacks; all the attacks were either severe or moderate, none being slight. Of 55 persons who had been both vaccinated and revaccinated, the percentage of attacks was 7·3; none of the

cases were fatal, and all the attacks are entered as either slight or very slight. Of 103 passengers and crew who had been primarily vaccinated, and who had a sufficient area of scar of good character, 20, or 19·4 per cent., were attacked, no deaths occurring amongst them. All those attacked were over fifteen years of age. Of 47, who whilst having scars of good character, exhibited an insufficient area of foveation, 9, or 19·1 per cent., were attacked, but no deaths occurred. Of these, 1 took place under and 8 over fifteen years of age; the attack under fifteen years of age being recorded as very slight. There were 27 persons who, with a sufficient area of scar, exhibited scars of a "bad" character. Of these, 5, or 18·5 per cent., were attacked, and again none died. All these attacks were in individuals over fifteen years of age. And, lastly, there were 32 persons whose vaccination was imperfect, both by reason of deficient area and bad character of the scars. Of these, 11, or 34·3 per cent., were attacked, and the deaths were 3, giving a fatality percentage of 27·2. All these attacks also occurred in persons over fifteen years of age. The results shown are very striking, in so far as they afford an indication of the great power of vaccination in preventing death from small-pox, even at a distance from the date of vaccination. Thus, even an imperfect vaccination saved all under fifteen years from death by small-pox. So, also, only one single attack below fifteen years of age occurred amongst any of the vaccinated.

CHURCH VAULTS, CHURCHYARDS, CEMETERIES, AND BURIAL REFORM.

A CIRCUMSTANCE has recently occurred which is calculated to add considerable weight to the remarks made in a recent issue of THE LANCET, and to provide a terribly forcible argument in favour of simple earth-to-earth burial. For some time past the members of the choir and congregation of St. Mary's, Woolnoth, have complained of sore throats and other ailments as the results of attending service in that church, the air in which has been of late much vitiated, and unpleasant odours have been very perceptible. The examination of the church by sanitary experts has resulted in its being closed, it being considered unsafe for anyone to remain in it for any length of time. Investigations are now being made to ascertain the source of the foul air, which is supposed to arise from the bodies deposited in the vaults below. This is one of the churches the vaults of which were inspected by the late Dr. Waller Lewis about the year 1850, and of which he reported: "The vaults I have visited up to the present time are generally in a very disgraceful condition. ..... In St. Mary's, Woolnoth, the churchwarden thinks there are about 1100 coffins; the sexton considers there are not more than 500. In this church leaden coffins have only been used (except in the chancel) since the regulations of the General Board of Health enjoining the use of lead." Unless, therefore, something has been done since that date to remedy the condition of the vault and its contents, there is only too much probability that the bad odours now perceptible arise from bodies interred in wooden coffins, without lead, in vaults above which living persons have till recently assembled every Sunday to worship. Not long ago there were complaints of similarly unpleasant odours being perceptible in another city church. Nothing can be clearer than the duty of the authorities, which is to have these vaults examined with every due precaution; either to entomb in charcoal and concrete all the remains which may be found; or, better still, to remove them to some suburban cemetery for burial in the earth. Moreover, now that two city churches have been found unwholesome in consequence of the vaults beneath, would it not be a wise precaution to anticipate the possibility of these evils arising in other city churches, by having an inspection of all those having vaults in which dead bodies are deposited, with a view to their sanitary entombment or removal. That prevention of these sore throats and other ailments would be better than cure must be obvious. In connexion with this subject, a letter from the Dean of York, chairman of the Council of the Church of England Burial Reform Association, comes to hand very opportunely. It is shown that the members of the Association are concentrating all their energies on two principal points—burial in perishable coffins, and in simple "earth-to-earth" graves. As the venerable Dean remarks, "the Burial Service in our Book of Common Prayer offers suggestions of a mode of disposing of the dead which has been declared by scientific men to be in accordance with sound science and sanitary law, and which, if properly and completely carried out, renders overcrowding impossible." In the Burial Service there is no mention of a coffin, the terms used being "corpse" or "body." The body is to be made ready to be laid into the earth, and earth is to be cast upon the body. The consequences of acting in direct defiance of all rubrics, all sanitary laws, and all reason are shown in such cases as St. Mary, Woolnoth, now, and previously in St. Andrew's, Holborn, St. Martin's-in-the-fields, and many others. Dr. Purey Cust observes towards the conclusion of his admirable letter: "Graveyards should be gardens where the dead are buried side by side, each succession of human bodies passing away into air and ashes, the earth being thus ready every succeeding generation to perform its beneficent action again. Thus natural laws will have been observed, and the earth which is the best deodoriser and antiseptic known, and the receptacle of all creatures which have lived and died, will have acted as the medium through which the air descends and performs its purifying and disintegrating action to reascend in new combinations and nourish fresh life."

USELESS INQUESTS.

WE have frequently in our columns called the attention of our readers to the uselessness of inquests which are held without a post-mortem examination and medical testimony as to the cause of death. We have had our remarks strikingly exemplified by an inquest held a fortnight ago at Lowton, near Newton-le-Willows, Lancashire, by Mr. Husband, the deputy coroner for one of the Lancashire divisions of the county. The subject of inquiry was the strange death of a boy four years of age named Jesse Jones, the son of a navvy employed on the Ship Canal Works. The mother stated that the deceased had been always healthy, except a slight attack of bronchitis which he had the year before, and from which he soon recovered. She had taken him to a neighbouring village, and returned home at 4 o'clock in the afternoon. He then went into the yard to play, but soon came in again, saying that he felt "as drunk as anything." She gave him some tea. He was taken to bed at 9.45 P.M., and he slept all night. Next morning, as he said he did not feel well, he was not sent to school, but allowed to rest on the sofa. Subsequently he had a dose of senna tea, which he vomited, and then some warm tea was given to him. At 2 o'clock in the afternoon he woke up, and began to "shake and tremble" and to froth at the mouth. A doctor was sent for, but the child died before his arrival. The boy was insured for £3 in the Prudential Society. Questioned by the coroner, she said there were no berries in the yard, and he had no sweets in the village. He fell on his head whilst playing in the yard, and this caused his head to ache. A neighbour testified to the boy dying in her presence in a fit. The deputy coroner said the symptoms pointed to deceased having eaten something poisonous—the pods of laburnum trees, or something of the kind. He could hardly see that the death was from natural causes. The jury could return one of four verdicts:

1st, accidental death; 2nd, death from natural causes; 3rd, death from taking improper food; or, 4th, an open verdict, which was to say there was nothing to show the cause of death. After some discussion the jury returned the following verdict, "Death from natural causes, the nature of which the evidence does not show." We cannot imagine a more futile inquiry. Surely a necropsy was requisite in order to ascertain whether the death was from natural causes or not. We might observe here that, in a case of this nature, if the coroner is satisfied, from inquiries made by the police on the spot, that there is no suspicion of foul play and no necessity for a post-mortem examination or medical testimony, he might save the time of twelve intelligent jurymen, and order the burial without summoning them to hold an inquiry which bears no fruit, and is useless so far as the finding out of the actual cause of death is concerned.

CARELESS DEATH CERTIFICATION AND VACCINATION.

VACCINATION is a convenient explanation of all sorts of constitutional weakness, and exempts parents from the reproach which might otherwise belong to them. At Cardiff lately the registrar directed the attention of the medical officer of health to the death of a child twelve months old registered as "caused by phthisis consequent on vaccination." The mother had chosen the child from whom the lymph was taken, in London, for its healthy appearance. But she somehow took it into her head that the vaccinator was to blame, and, unfortunately got a medical man to put into his certificate, merely on the strength of her fancy, that the phthisis was caused by vaccination. We can imagine the delight that would run through the anti-vaccination circle at Cardiff by such a case. Fortunately the medical officer of health, Dr. Walford, took the case in hand and got at the facts. He found "the mother herself had twice suffered from inflammation of the lungs, some of her brothers and sisters were consumptive, her own mother died from consumption, and sixteen of her mother's brothers and sisters had also died from the same complaint." With such a history of course even anti-vaccinationists cannot contend, and the case makes one more addition to the pile of absurd conditions which mostly constitute anti-vaccination literature. We must join our contemporary, the *South Wales Daily News*, in expressing at once regret that a medical man could have written such a certificate as was given in this case. The value of medical certification depends not on what comes into the mother's head but what comes out of the doctor's educated mind. On hearing the facts brought to light by Dr. Walford, the medical man at once admitted that the vaccination theory could not be maintained, and that it had been inserted wholly on the mother's statement.

A WARNING TO HOSPITAL VISITORS.

BY this time not only physicians and trained nurses, but a large proportion of the general public, are familiar with the fact that a fluid and light diet in typhoid fever is practically a matter of life and death. Unfortunately, an equally large or even larger number of persons are still grossly ignorant on this elementary and most important point, as the sequel shows. A few days ago a young man, a patient in the London Hospital, about the fourth week of this fever, partook of some grapes which his father brought him—of course, against hospital rules. The result was vomiting, with consequent fatal perforation. In this case it is difficult to say where blame should chiefly be attached. The patient was at that critical stage in the disease when appetite awakes with the advent of convalescence, but he must nevertheless have known pretty well what food for him was contraband. For the father's guidance there were placards in abundance throughout the hospital, forbidding visitors to bring into the wards any food save tea, sugar, and butter; yet he never noticed them! This is the most remarkable part of the story, yet, strange to say, such carelessness as this is of every-day occurrence. Partly, no doubt, from inability to read, and partly from mere heedlessness and want of the sense of personal responsibility, hospital patients and their friends daily ignore the simplest rules inscribed on admission cards and letters for their guidance. Much inconvenience results—though not often, let us hope, such mishaps as that above mentioned. A very moderate concentration of attention on these necessary details would go far towards averting both lesser and greater evils. It is therefore to be hoped that the lessons of this deplorable incident will not be lost upon the class whom it most nearly affects.

SURGEON CRIMMIN AND THE VICTORIA CROSS.

THE Queen has been pleased to bestow the rare distinction of the Victoria Cross upon Surgeon John Crimmin, L.K.Q.C.P.I., L.R.C.S.I., of the Bombay Medical Service, for the following act of bravery:—"Lieutenant Tighe, 27th Bombay Infantry (to the Mounted Infantry to which corps Surgeon Crimmin was attached), states that in the action near Lwekaw, Eastern Karenni, on Jan. 1st last, four men charged with him into the midst of a large body of the enemy who were moving off from the Karen left flank, and two men fell to the ground wounded. He saw Surgeon Crimmin attending one of the men about 200 yards to the rear. Karens were round the party in every direction, and he saw several fire at Surgeon Crimmin and the wounded man. A sepoy then galloped up to Surgeon Crimmin, and the latter joined the fighting line which then came up. Lieutenant Tighe further states that very shortly afterwards they were engaged in driving the enemy from small clumps of trees and bamboo, in which the Karens took shelter. Near one of these clumps he saw Surgeon Crimmin attending a wounded man. Several Karens rushed out at him. Surgeon Crimmin thrust his sword through one of them and attacked a second; a third Karen then dropped from the fire of a sepoy, upon which the remaining Karens fled."

THE CARPET-BEATING ANNOYANCE.

No intelligent person, not even the mistress of a house absorbed in the business of spring cleaning, will deny that the beating of carpets is, for various reasons, a social nuisance. The addition of household dust and particles of woollen texture imports nothing of advantage, but often more or less that is injurious, into the air we breathe. It has been urged that germs of disease are thus distributed in the atmosphere. This is true enough, though happily the danger of infection from such a source is in all large open spaces reduced by the action of oxygen and aerial currents. Another drawback is hardly less noteworthy—namely, the disturbance of rest caused by the drum and rap of incessant switching. No person possessed of a sensitive nervous system—above all, no invalid—need hope for quiet while the work goes on. An attitude of uncomfortable disinterestedness is all that remains for him. His evil may be someone's good, at all events if carpet-beating is necessary. To some extent it probably is so. Time, distance, cost, and the want of sufficient apparatus combine to render as yet more or less uncertain the aid of other mechanical methods. If these were now easily and universally applicable, the beating system would not have a leg to stand on. For a time we fear it must continue; but in mitigation of its evils and annoyances it is only fair to allow to the com-

plaints of the afflicted, if supported by a reasonable amount of proof, a power stronger than that of remonstrance and akin to that of a legal veto.

PROSECUTION FOR NON-NOTIFICATION OF INFECTIOUS DISEASE AT LEICESTER.

WE have before pointed out that Leicester, which is so jealous of interference with the liberty to have small-pox, has no compunctions about curtailing liberty in other ways in the interest of public health. The Sanitary Committee has just had its first prosecution for non-notification. The case was that of a jeweller who had a son labouring under scarlet fever, and he was charged first with neglecting to give notice of the fact to the sanitary authorities, and, secondly, with exposing the boy in his shop without proper precautions. The town clerk said the Sanitary Committee considered the case as one of importance to the borough. The proceedings were taken in no vindictive spirit, but to give fair warning to the public that even where there is no medical man in attendance, as here, the parent will be held responsible and the full penalty demanded. The full penalty was not inflicted in this case, but a fine of £1 in respect of each charge, or fourteen days' imprisonment in default. The prosecution will do good. It will commit Leicester more and more to an observance of the law, or at least expose it to the charge of inconsistency in not observing the whole law, and it will let the public know that the not calling in a medical man in no way exonerates them from the duty of notifying. The father knew of the nature of the disease, for he had given information to the school at which his boy attended. It is well known that the milder cases of scarlet fever require very careful medical management as well as others. But there is a tendency to forget this among the working classes and to suppress the fact of such cases existing. Leicester is one of the towns which had the system of notification under a local act.

TRICUSPID STENOSIS.

FROM some facts collected by M. Leudet (of Rouen) and his father, the late Professor Leudet, the comparatively rare condition of stenosis of the tricuspid orifice (*L'Union Médicale*, No. 96) may be either congenital or acquired. The former arises either in fatal endocarditis or from a malformation producing an excessive amount of muscular tissue at the auriculo-ventricular junction. In consequence of the stenosis, there may also be patency of the foramen ovale and incomplete formation of the ventricular septum; sometimes it is associated with pulmonary stenosis or lesions on the left side. Cyanosis is the most frequent symptom; and a systolic bruit, rarely a diastolic, may be produced; whilst the enlargement of the right auricle may occasionally be detected by percussion dulness crossing the sternum. It is obvious that the diagnosis of the condition is hardly to be determined, from other forms of congenital malformation. M. Leudet has collected details of 114 cases of acquired tricuspid stenosis, 86 females and 22 males (in 6 the sex not stated); and in 57 no antecedent disease, such as rheumatism, chorea, typhoid fever, or scarlatina, was noted. The degree of stenosis may be considerable, and it may be produced by—(1) cohesion of the valves; (2) true stenosis of the orifice; (3) obstruction by vegetations, &c. The first often is the most frequent—"a chronic, slow, silent endocarditis, generalised rather than deep, vegetating but little, yet adhesive and plastic, tending to cause the damaged valves to unite at their margins." In only 11 cases out of the 114 was the tricuspid stenosis solitary; usually there is concomitant mitral stenosis, which is always more marked than the tricuspid. Presystolic thrill and bruit at the xiphoid and above may be present, but do not from these observations appear to be common.

THE LIVERPOOL ABATTOIRS.

THE public mind in Liverpool is somewhat exercised because the Abattoir Company have petitioned the Corporation for the renewal of their present lease and the grant of further land for the extension of their premises. The *Liverpool Courier* protests strongly against the granting of these privileges, on the ground that the abattoir is in the centre of the city, and its existence tends to depreciate the property in the neighbourhood. Land which has been cleared of houses has remained idle and profitless, and the houses which still exist are said to be unfit for habitation—the businesses which are carried on in connexion with the abattoir, the gut-scraping, blood-boiling, hide-dressing, offal-salting, &c., constituting a serious nuisance. If this statement is free from exaggeration, it certainly behoves the authority to find another site. The business of killing animals for food should not be carried on in the midst of a large population, and a public abattoir thus situated might readily become a more serious nuisance than even private slaughterhouses. London, in spite of the improvements which have been effected, is still conscious of the inconvenience which results from the driving of cattle through the streets and from their slaughtering in the midst of dwelling-houses. The only remedy is the public abattoir; but this should be situated in a proper locality, sufficiently remote to enable the business to be conducted without offence, and so placed that animals arriving by sea or by land can be conveyed there without necessitating their passage through the streets. The need for London to change her ways is so obvious that the proceedings at Liverpool will be closely watched, for we are convinced that an authority which has freed itself from private slaughterhouses will never again revert to their use. We do not doubt the capacity of the Liverpool Corporation to find a solution to their difficulty.

CHOREA ATTRIBUTED TO POISONING BY IODOFORM.

THE twenty-fifth annual report of the Jenner Hospital for Children in Berne contains a report of a secondary retropharyngeal abscess in a boy of six years, who was suffering from disease of the cervical vertebræ. Professor R. Demme opened this abscess, and a second, which had reached to the middle of the right clavicle. A little iodoform bougie was introduced in the fistulous canal, and the wound dressed with iodoform powder and gauze. Three days afterwards the boy suffered from headache and complained of being sick, but the dressing was not changed, and a second iodoform bougie was introduced four days later, when convulsions began to occur gradually, passing on to chorea. The iodoform was then omitted from the dressing, and the chorea disappeared after a fortnight. A few weeks later another practitioner dressed the same case with iodol and iodol gauze, and again chorea appeared, lasting for three weeks.

THE DESTRUCTION OF SEWER AIR IN LEEDS.

THE desirability of arranging for the destruction of sewer air is engaging the attention of the Sanitary Committee of the Corporation of Leeds. One proposal is to utilise the refuse which comes from the premises of certain manufacturing chemists by removing it to a number of cisterns to be constructed along the lines of sewers, into which it would be made to flow slowly by day and by night. The waste refuse in question contains a large percentage of sulphate of iron, and it is assumed that if it mingles with the sewage in a moderate amount only it will not damage the joints, whereas it will prevent fermentation and decomposition, and in this way stop the formation of unwholesome effluvia. Another proposal is to ventilate the

sewers by means of shafts so arranged that the heat passing up these shall both add to the ventilation and destroy all the noxious properties of the sewer air. Before embarking in either scheme, it has been decided that experiments should be made in a certain section of the borough as to both methods, and that before even these experiments are commenced the sewage itself and the gases evolved by it should be properly examined and analysed, so that the committee may know precisely with what they are dealing.

THE OUTBREAK OF DIPHTHERIA AT EAST HADDON.

THE outbreak of diphtheria in the Northamptonshire village of East Haddon shows no sign of dying out. The parish of this name is distinctly rural, having, according to the last census report, an area of 2572 acres, and a population at the date of the last census of 752 persons against 726 at the previous census in 1871. In this small rural community no fewer than 17 deaths resulted from diphtheria or diphtheritic croup between Aug. 26th and the 11th inst.; 8 deaths occurred on the four days ending Aug. 30th, after which the number of deaths decreased, no more than 1 occurring per day until the 11th inst., when 3 deaths took place. The National School has been fitted up with 14 beds, and further accommodation has been secured should necessity arise. So fatal an outbreak in so circumscribed an area should, if made the subject of immediate investigation, throw useful light upon the causation of such rural epidemics The increase of our knowledge concerning the causation and behaviour of this disease is becoming daily more important, owing to the general increase of diphtheria mortality in this country.

ANTI-VACCINATION IN ST. PANCRAS.

AN evening contemporary states that the anti-vaccinationists in St. Pancras have given notice of their intention to take aggressive action with regard to the administration of the vaccination law in that parish. The guardians of St. Pancras have, we understand, followed the advice of the Local Government Board to refrain from repeated prosecutions of the same individual, and have in practice limited themselves to one prosecution, unless it is proved that the house or neighbourhood in which the unvaccinated children reside is visited by or threatened with an epidemic of small-pox. But this action does not satisfy the anti-vaccinationists, who would prefer to see the law not enforced at all. What course the anti-vaccinationists have decided to take is not stated, but we doubt if the guardians will depart from their usual procedure because difficulties are put in their way. They will, we anticipate, make no change until the Royal Commission has reported, and the result of the inquiry now being made is known. They will then have the conclusions of the Commission to appeal to as guide for their future conduct.

IODOFORM IN MALIGNANT PUSTULE.

DR. E. RINONAPOLI (*Bolletino della R. Accad. Med.-Ch di Napoli*, No. 3, 1889), gives particulars of several cases of malignant pustule treated by the subcutaneous injection of a solution of iodoform in ether. Dr. Rinonapoli began this method in 1886, some thirteen months before Senger's work on the antiparasitic action of iodoform appeared. The method employed is that of several injections into and around the seat of the pustule of a 10 per cent. solution of iodoform in ether. The pain attending the injections is of severe burning character, but soon passes off. The beneficial effects are rapid in their appearance. In three or four hours after the injections, even in advanced cases, the fever lessens, the swelling round the pustule disappears, the tongue becomes clean, and the patient is able to sleep and to take food. The treatment appears to be of distinctly specific character, and to arrest at once the growth and multiplication of the charbon bacillus. If applied at the outset of the attack, the effect is said to be almost magical.

THE GAOL HOSPITAL AT JOHANNESBURG.

A CLERICAL GENTLEMAN (Rev. F. H. Fisher) has written to the Johannesburg Hospital Board to bring to the notice of the Sanitary Board the state of that portion of the gaol which is used as a hospital and the treatment of the patients there. He says: "I know not who is responsible for this place; but I have no hesitation in saying that the whole thing is a disgrace to a civilised town. In an unkept and brick-floored room, opening immediately into the courtyard of the gaol, are a dozen bedsteads, upon which lie as many patients, white and natives, young and old. In this filthy den comfort is unheard of and decency unknown. Dirty coloured blankets are the bed-coverings of men seriously ill, and cleanliness is a word taken from a dead language. The rations served out to poor fellows suffering from dysentery, enteric fever, and severe accidents consist of a chunk of bread and an equal amount of cold boiled mutton." It seems that by no means are all of the patients prisoners Even if they were, they ought to be treated with humanity; but if the charge made by the reverend gentleman is based on fact, the authorities who are responsible for the gaol hospital have a good deal to answer for, especially if, as is further asserted, contagious and non-contagious cases are put together.

WOLVERHAMPTON GENERAL INFIRMARY.

AT the recent half-yearly meeting of the governors of the above institution a resolution was carried to create the new office of honorary pathological officer, and on the motion of the chairman, seconded by Dr. Millington, the appointment was conferred upon Dr. McMunn, whose researches in pathological chemistry and allied subjects are well known. It is pleasant to find that the labours of Dr. McMunn are properly esteemed in the town in which he resides, and in affording him increased facilities for the pursuit of his studies the governors of the Wolverhampton Infirmary have shown a commendable appreciation of the importance of scientific inquiry.

ROYAL COMMISSION ON VACCINATION.

THE first Report of the Royal Commission on Vaccination, which it has been decided to issue at once, will contain all the evidence submitted to the Commission up to the date of their adjournment—namely, that of Sir John Simon, K.C.B., Dr. Wm. Ogle, Dr. Thorne Thorne, and Dr. J. H. Rauch of the Illinois State Board of Health.

SCARLET FEVER IN CAMDEN TOWN.

A PARAGRAPH is appearing in various newspapers to the effect that Bayham-street, Camden Town, is suffering from scarlet fever, and this is associated in the mind of the writer with the unwholesome condition of the Regent's Canal. Let the condition of the canal be what it may, it should be pointed out that, whether or not scarlet fever is prevalent in Bayham-street, there is no reason to suppose that it owes its existence to any "dead dogs, cats, and garbage thrown into the water." We are so much accustomed to read exaggerated accounts of the state of the Regent's Canal that we shall not be surprised to hear that its bad condition has been again overstated. But whether this is so or not, there is no reason to assume that scarlet fever has its origin in such a cause.

FOREIGN UNIVERSITY INTELLIGENCE.

Buda-Pesth.—Dr. Alex. Szénássy has qualified as *privat-docent* in Bandaging and the Use of Instruments.

Cagliari.—Dr. Lustig has been appointed Professor of General Pathology.

Cracow.—Dr. Pietrovski has been recognised as *privat-docent* in Physiology.

Kharkoff.—The number of applications for admission to the various Faculties is smaller than it has ever been before, and it is remarkable that nearly all the applications refer to the Medical Faculty, there being scarcely any students wishing to enter the Legal and Philosophical Faculties.

Kieff.—Dr. V. T. Chernoff, Director of the Olga Children's Hospital in Moscow, has been appointed to the chair of Children's Diseases.

St. Petersburg.—The number of applications for admission to the Medico-Chirurgical Academy of St. Petersburg, the most important medical school in Russia, is far greater than the vacancies. Not only have many applicants who have passed their maturity examinations at the St. Petersburg gymnasiums to be refused, but also some students of the St. Petersburg University who desire to be transferred to the Academy, which, though entirely distinct from the University and governed by the Ministry of War, in many respects fills the place of a Medical Faculty to the University.

Tübingen.—Drs. Vierordt and Wagenhäuser have been promoted to the rank of Extraordinary Professors.

Professor Weigert is about to retire from the post of editor of the *Fortschritte der Medicin.*

DEATHS OF EMINENT FOREIGN MEDICAL MEN.

THE deaths of the following eminent foreign medical men are announced:—Dr. Preiss of Carlsbad; Dr. Oré, Professor of Physiology in Bordeaux; and Dr. Rudolf Voltalini, Professor of Laryngology and Otology in Breslau.

FOLLOWING closely on the discussion as to the poisonous ingredient in fly-papers, we have the announcement in Swiss journals that a series of bank-notes recently issued by the Confederation, and printed in green colours, have induced in the officials who manipulated them the well-known symptoms of irritant poisoning. The matter is under investigation; but, meanwhile, those of our compatriots who may still be in Switzerland should know that the notes in question are fifty-franc notes.

THE well-known and able ophthalmologist, Professor Dr. Jacobson of Königsberg, died on the 16th inst. at Cranz, a watering-place on the Baltic. The deceased was the father of Dr. Julius Jacobson, likewise a well-known ophthalmologist, who has been residing in London for several years past.

SUNDERLAND AND BISHOPWEARMOUTH INFIRMARY. The ninetieth annual report of this institution again showed a considerable increase in the number of patients treated in the infirmary, the total number being 4833, or an increase of 933 compared with the preceding year. The deaths numbered 64, which was equal to a rate of 3·6 per cent. as against 6·8 and 3·9 per cent. last year. The total income from all sources was £8122 16*s.* 6*d.*, and the expenditure £5269 15*s.* 10*d.* The committee recommended that the surplus be utilised in repaying the balance of the amount borrowed from capital, with the sanction of the Charity Commissioners, in 1881. The report was adopted. The committee desire to remind those interested in the work done by this institution that as soon as the Hartley Memorial Wing, which is almost completed, is occupied by patients, additional funds to the amount of £2000 per annum will be required.

ICE SPOILS FISH.

BY J. LAWRENCE-HAMILTON, M.R.C.S.

No. III.

IN considering the preservation of fish, its red muscular fibres are comparatively so few that for practical purposes the study of the pale fibres is sufficient. Whilst in the higher animals used as food the muscles are arranged in close, thick, firm bundles of long fibres, in fish nearly all the muscles are in the form of loose, short, soft bundles arranged in narrow rings in a zig-zag fashion, separated from each other by delicate partitions of thin connective tissue. Except in the eel, salmon, and mackerel, fat is usually absent in fish. The flesh of salmon yields from 63 to 68 per cent. of water, whilst that of ordinary white fish furnishes from 75 to 82 per cent., which are much larger proportions of water than is contained in meat. Not only in the intestinal tract, but also in the blood, lymph, and tissues of healthy *living* sea and fresh water fish, active and multiplying bacteria are found. Though fish up to a certain point apparently are able to tolerate the presence of these bacteria in their blood and lymph, yet, should the vitality of their tissues become lowered by confinement, injury, starvation, or disease, the fish will probably be overcome and die. The same applies to external and internal parasites, which almost invariably frequent healthy fish, who, up to a certain point are also tolerant of these parasites. On death fish readily absorb water from moisture, whether naturally in the atmosphere or foolishly supplied by the chronic conventional customs of using melting ice, as well as by the continual watering of fish on the fishmongers' slab. How excessively deleterious the absorption of the moisture will be is apparent upon recollecting the filthy state of the fish boxes, barrels, and baskets in the equally filthy fish boats, fish markets, and some fishmongers' shops.

Though from time immemorial the Norwegians, immediately on capture, have always *bled* their fish by incisions just under and behind the gills, the usual situation of the heart in most fishes, or else above the tail, and then at once *gutted* their fish, yet British fishermen seem still unwilling to listen to and to learn this wise economical practice. The Dutch, introducing the Scandinavian plans of bleeding before clotting and gutting herrings on capture, together with the plan of pickling and curing herrings re-invented by an Englishman, Will Blenkinson, secured for their countrymen from the fourteenth to the eighteenth centuries the virtual monopoly of the marine mastership of the world, including its carrying and export commerce. Because of its rapid putrefactive contagion, I propose that no unbled and ungutted dead fish should be allowed to enter any fish market or fishmonger's shop in the United Kingdom. Living cattle with certain contagious diseases are slaughtered by Government authority. What butcher would dream of cutting up meat from an ungutted or uncleaned carcase? Though fish is pre-eminently more prone to early putrefaction than meat, nevertheless the conventional British fish markets and many fishmongers' shops stink from avoidable causes, and thereby spoil any unspoilt fish in their vicinity. A slaughterhouse would be properly objected to in the heart of most towns; nevertheless, fish markets and fishmongers' shops, evil-smelling from avoidable putrefactive bacteria, are sanctioned, though I presume that under the present Health Acts of the United Kingdom their present condition is illegal. Prior to considering the effects of ice on fish, it is necessary to recollect the previous stages of fish life and fish death, from the time when the fish is caught till it arrives at the consumers.

Accidental injuries.—Wounding with a spear or gaff hook, or by trawling fish in nets over rough grounds, and the pressure of a mass of fish in the nets, cause injuries to the skin, scales, fins, tail, gills, muscles, abdomen, and other parts of the fish, and increase its rapid putrefaction. In the trawl immature fish often get so spoilt and injured that they are technically said "not to take the ice," and are hence thrown back into the sea.

Avoidable fish-spoiling through carelessness, filth, and bad packing.—Placed upon their bellies on the usually filthy boards at the bottom of the smack, the abdomen of fish

may rot whilst its sides and back remain comparatively sound. In the United Kingdom captured fish are often thrown *unbled* and *ungutted*, and always unpithed, into the more or less foul hold of the fishing boat, where they remain exposed to successive alternations of heat, sunshine, moist and melting ice, and putrefactive filth. The fish are frequently ruthlessly crushed, bruised, and cut by the heavy weights of their thoughtless captors standing in sharp-nailed boots, whilst the lower layers of fish may have tons of fish resting upon them. In some parts of England, from about September till April, many of the smacks fish by themselves, and not in a fleet, from which a steamer or other carrier takes away each day's fish. As such isolated smacks stay out at sea about a week, it follows that a portion of their catch has been already some six days in ice before landing. Such stale fish by putrefactive contagion damages the fish more recently caught. On reaching the harbour the fish are commonly pressed into filthy fish boxes, barrels, and baskets pregnant with putrefactive bacteria. The fish suffer further shaking, banging, and bruising by being flung about on the pier, where this food lies again exposed to heat, rain, and sunshine. As the fish boxes or trunks have always wide open apertures, and in the carrying boats and railway and street vans the boxes are closely piled one above the other, it follows that the flowing filth from the upper boxes circulates through the lower ones, whilst the last tier both from above and below is surrounded with these putrefactive abominations.

The empty fish trunk weighs from 19 lb. to 28 lb. Its ice and melted ice may be taken at from ½ lb. to 1½ lb. Exclusive of the box or trunk at Billingsgate, a box or trunk of brill is supposed to weigh from 80 lb. to 90 lb. of fish; of gurnards or rays, 70 lb; of hake, 112 lb.; of soles, 70 lb. to 100 lb.; of mackerel, 112 lb.; of plaice, 80 lb. to 100 lb.; and of whiting, 80 lb. The usual size of a fish trunk is 24 in. by 18 in. by 9 in., with a capacity of 2¼ cub. ft., but these trunks are occasionally so packed that from 20 to 40 per cent. dead weight of fish may be wanting. "Taking the load" is a market term alluding to a trade trick of emptying out three trunks, and then repacking the fish so as to make it pass as the contents of four trunks. Trunks or boxes when the fish come up to the top are called "levels," but if the fish be piled up in excess these are termed "fulls." It is said to be a common trade trick to double up a big flat fish in the middle of the trunk to make the load appear full, or else to add 20 to 30 per cent. of ice. *Loose* trunks are those underpacked with fish. Hence it is evident that in the wholesale markets, to a certain extent, fish is sold by guess-work, an element of gambling which Parliament should stop by compelling fish to be sold by accurate weight only. The pound avoirdupois would make the best standard. Of course this gambling in fish is virtually carried on at the expense of the consumer—the public.

Fish are, again, further damaged by close packing and pressure. To economise space in packing the barrels, a sharp sudden wrench or twist bends the fish into a coil, breaking up the animal's softened muscles and structures, thereby inviting and increasing putrefaction. Finally, such fish are tightly crammed into the conventional rough, porous, unvarnished, foul boxes and barrels, which are rudely closed by sharp hammering. Suddenly twisting the tail of the whiting, &c., to pass through its mouth, ruptures the soft, flabby, loose muscular fibres, especially when such fish have been previously skinned. The exposure of dead fish thus wastefully maltreated in fishmongers' shops, pregnant with putrefactive bacteria, accelerates decomposition.

When fish has once become flabby, stale, or tainted, no preservative process can possibly restore its lost flavour, freshness, or firmness. The few fish which British fishermen occasionally gut are often to be seen placed in a few inches of stagnant water, super-saturated with putrid blood and filth. Frequently handling fish, especially with dirty hands, accelerates putrefaction, as also the time-honoured chronic conventional custom of watering fish on the fishmonger's slab. By a statute of Edward I., dated 1272, no fishmonger was allowed to water his fish more than once; no fresh fish was to be kept in London beyond the second day from its capture; nor was any bad fish to be sold. The profit of the London fishmonger was limited by this statute to one penny in the shilling. Of course, in those days neither the fishermen nor the public were afflicted with the middlemen wholesale salesmen, whom it is alleged make undue profits apparently at the expense of the fishermen and of the public.

Fisherfolk so fully realise the present difficulty of preserving fish, that stale and decomposed fish is technically termed "over-day" (over-a-day) fish. Fisherfolk state that thunderstorms spoil fish, but as thunderstorms occur chiefly in hot, still weather associated with rain, the explanation is included in the fact that fish decompose quicker on a wet, windless winter's day than during a dry hot summer's day with a brisk breeze. Others credit the bright rays or a full clear moon with causing rapid decomposition of freshly-caught fish; but here, also, there seems to be no foundation for this statement.

Railways spoil fish.—Suddenly flinging down a heavy fish trunk loosens and damages the soft muscular fibres of fish, accelerating decomposition. Owing to the continued violent shaking in transit, railway-carried fish is so greatly damaged that even its wholesale trade price is lessened by upwards of 25 per cent. when compared with water-borne fish.

Chemicals spoil fresh fish.—Common salt, brine, boracic acid, tartaric acid, nitre, sugar, burning sulphur and aromatics, boro-glyceride, lime-water, shea or vegetable butter, powdered charcoal, flour, sawdust, or other antiseptics, as well as forcing under mechanical pressure chemical solutions into fresh fish, alike fail to keep fish from decomposing when applied in the usual commercial proportions.

Ice spoils fish.—The thickness of fishes and certain qualities of their skin cause slight variations in the freezing point of the different kinds. The freezing point of fish is a few degrees below that of water or of the ordinary commercial ice at 32° F., which, even were it used in large excess, could then only superficially and incompletely chill the exterior layers without practically affecting the temperature of the interior of a thick fish's body. But even in these conditions ice spoils the freshness, firmness, and flavour of fish by rendering it, prior to putrefaction, insipid, soft, and flabby. In the United Kingdom, by coasting vessels, fishing is seldom carried on during Saturday afternoons and all Sunday, fish caught on Friday night and often days previously, especially during continued storms, fogs, and calms, could not reach Billingsgate till Monday morning, and the consumer late on Monday, when it would never be less than three days old and often more. Indeed, much of the best prime trawl-caught fish sold at Billingsgate is from three to ten days old! The London fish trade alone is now (1889) said to consume upwards of 1000 tons daily of ice during the summer months. Ice is an expensive, bulky, rapidly perishable, wasteful product. The present average wholesale winter or minimum price of rough artificial ice is as low as 11*s.* the ton, when purchased in quantities of two tons or more, and the average price of artificial ice in winter bought by the smaller fishmongers and costermongers is 1*s.* the cwt., or at the rate of £1 the ton. In London the price of natural Norwegian ice is, even in winter, often £1 10*s.* the ton, which is popular in Billingsgate and other fish markets, where also actually *crushed* natural ice at 1*s.* 9*d.* the cwt. or £1 15*s.* the ton is customary. Being imported from the metropolis, ice in most fishing districts is, again, much dearer than in London. Compared with the winter prices, during the summer months, when ice is most used and most wasteful, it is much dearer—sometimes by 50 per cent.

Poisoning by iced fish.—Experience seems to show that the gravest cases of fish poisoning arise more commonly from eating fish which has been kept on ice than from eating fish kept naturally cool. Where fish is preserved on ice it appears to me that the ice only favours putrefaction by furnishing a constant supply of moisture, carrying with it the putrefactive bacteria derived from its foul and filthy surroundings, so that this iced fish remains covered with fresh solutions of filth pregnant with putrefactive bacteria. Thus large quantities of those subtle complex bodies, the animal alkaloids or ptomaines, are probably elaborated, and give rise to those marked symptoms of poisoning which sometimes occur from eating fish preserved on ice. On the other hand, keeping fish dry and cool can in no way favour putrefaction. And although here cases of poisoning may happen, yet, as far as I can gather, the symptoms are much less marked, and pass off sooner, the toxic effects being usually confined to a passing attack of vomiting and diarrhœa. Whilst in the case of fish preserved on ice the vomiting and diarrhœa may be less marked, though the other

symptoms may be much more profound and lasting, and even sometimes fatal.

There are various poisons derivable from putrid fish, the detailed consideration of which require much further elaboration, work, experiment, and research. Indeed, as upwards of seventy different kinds of food-fishes, within a few hours of their death, on being eaten, give rise to poisonous symptoms, the Russian Government in 1894 will award a prize of 5000 roubles (say roughly £500) for the best essay upon the nature and cure of fish poisoning. It is unwise of Parliament not to imitate and initiate similar plans for the benefit and protection of the British and colonial public, especially for the poor, whose cheap, healthy food-supply seems chronically shamelessly ignored and outrageously neglected by those in official legislative authority. Independently of the sacred duties of charity, humanity, and religion, if viewed exclusively as a matter of public economy and expenditure, as a matter of mere pounds, shillings, and pence, then the question of cheap, healthy, abundant food means diminished taxation, which appeals directly to the pocket of every individual taxpayer. The solution of this subject as regards increasing the supply of fish, whilst lessening its cost and improving its quality and commercial value, I reserve for subsequent communications.

THE PARIS UNIVERSAL EXHIBITION.

(FROM OUR SPECIAL CORRESPONDENT.)

Experiments by the Jury on Hygiene.—International Congress on Accidents to Workmen.—Exhibits of Waterproofs and Textile Fabrics.

THE time is now rapidly approaching when the distribution of prizes to the exhibitors will take place. I cannot speak of all the classes of the Exhibition, but this much at least may be said—the rewards in all that relates to public health have been fairly, honourably won. The juries have done their work in a thoroughly conscientious and scientific manner, especially with respect to all that relates to filters and to drainage. With regard to the latter, the gentlemen of the jury not only allowed me to be present, but were anxious to avail themselves of any advice I could give. The experience acquired at the International Health Exhibition held in London four years ago was fully utilised and improved upon. The jury had a small hut built immediately behind the Pavilion devoted to the sanitary exhibits on the Place des Invalides, and here the experiments were made, day after day, for several weeks. Each closet-pan submitted was carefully measured, and a drawing to scale taken. Then the pans were in turn affixed to the same flush tanks, so that the conditions of the experiment were equal for all. A flush of ten litres of water was given in every instance—that is, a trifle (a litre) more than our usual two-gallon flush. The pans were first painted with plumbers' ink, and notes taken as to how far the stains were removed by the flush, and whether any of the water splashed over the border of the pan. Then pieces of paper were placed round the pan to see if these were all removed by one flush. Finally a fixed number of potatoes or apples were put into the syphon to test if the flush could remove them all. Careful notes were taken of each experiment, and thus a comparison, based on the material results, was established as to the respective value of each pan, showing whether the pan was thoroughly cleansed and the trap completely emptied by the usual flush. The earthenware drain pipes of which an increasing number are now manufactured in France, were next examined. Every pipe was submitted to four different experiments. To test resistance to external pressure, a long plank of wood was placed over the pipe. One end of the plank was held down to the ground. On the other higher end weights were placed till at last the pipe broke under the increasing pressure. This test showed how greatly the pipes varied in quality; for, while the weakest broke under a weight of 800 kilogrammes, the strongest carried 2500 kilogrammes. The experiment for internal pressure is not so important, as it is very rare that a drain or even a sewer pipe is exposed to very great internal strain. Nevertheless, the experiment was made. Both sides of the pipes were cemented, a little hole remaining at one end to introduce the nozzle of the pneumatic pump. It was then found that the pipes could resist internal pressure of from four to six and a half atmospheres before bursting. The third experiment was particularly useful. It was to see how far a pipe could resist a shock or blow. Where earthenware pipes are used for the drainage of small streets, and are not laid deep, the passing of heavy carts or the fall of heavy loads may cause such pipes to break. The pipe was placed by the side of an upright measured gauge. An iron ball weighing six and a half kilogrammes was raised along this gauge and then allowed to drop upon the pipe. Each time the ball was dropped from a greater height until at last the pipe broke. The result was that the weakest pipe broke when the ball fell from a height of ten centimetres, and the strongest was only broken when the ball was raised to the height of twenty centimetres. The fourth and final experiment was of a very important and ingenious character. The pipes selected measured fifteen centimetres in diameter and sixty-five centimetres in length. They were placed in a heated oven for twelve hours so that they should be thoroughly dried, and then they were carefully weighed. After that the pipes were put to soak in water for twenty-four hours; then taken out and weighed again. The object was to ascertain how much humidity the pipes were capable of absorbing. The difference of the results attained was very remarkable. The best pipe only absorbed 150 grammes of water; the worst took up no less than a litre, or 1000 grammes.

During all the past week a very interesting international Congress has held its sittings at the Ecole de Droit, on the question of accidents to workmen and employers' liability. Some of the debates were purely technical, and only concerned engineers. For instance, the question of boiler explosions and the best means of constructing and placing machinery so as to avoid accidents. Then a great deal was said as to the right of inspection and the duty of inspectors. This, in France, is limited to factories where women and children are employed, the Legislature deeming that adult men are able to take care of themselves. The members of the Congress were for the most part engineers, factory inspectors, delegates of chambers of commerce, a few actuaries—in all more than 700 delegates, including the official representatives of eleven European governments, several members of various parliaments, and a few doctors of law and of medicine. The importance of such a Congress from a public health point of view is perhaps best set forth by glancing at the report on the statistics of accidents to workmen, read by M. Octave Keller, mining engineer, and Vice-President of the Parisian Statistical Society. For instance, the French railway companies, which now employ 223,000 servants, show that the annual average, taken on the experience of the ten years from 1875 to 1884, is equal to 239·5 killed and 1850·4 wounded. In Germany, the average proportion of railway servants killed and wounded is equal to 4·64 per 1000, of which 1·35 are killed. In England the proportion of killed is much higher, being equal, on one railway, from 1882 to 1885, to an average of 2·431 per 1000 employed, and, according to some authorities to 3·3 throughout the country. For coal mines in France, for ten years, the average killed was 1·56 per 1000 and 8·87 per 1000 wounded. But all these figures seem but as details when compared with the magnificent statistics of the German empire. There, to apply the Bismarckian laws on compulsory insurance, a full census of the exact occupation of every person in the empire was taken. Thus in 1887 there were 259,977 State servants and 3,861,560 workmen or artisans insured by their employers in the sixty-two corporations of the various trades concerned. The last year's record shows that 115,000 accidents took place, of which 17,102 were so serious as to entail more than three months' treatment. These latter figures give some idea of the magnitude of the question treated by the Congress, and show how numerous are the accidents to workmen which occur, and will continue to occur unless more stringent measures are taken. Industry, as M. Linder, the President of the Congress, remarked on the opening day, is a battle-field strewn with dead and wounded. We shall never quite succeed in preventing this, but we can reduce the danger and we can relieve the afflicted. The only difficulty with regard to the latter proposal is the fact that if sufficient compensation is guaranteed to the workman in case of accidents, he will become careless, and mishaps will be of more frequent occurrence. Then there is also the danger of simulation of injury. This, however,

the Congress did not feel itself very competent to discuss, and the subject had already been very well debated at the Congress on Forensic Medicine.

Another point on which the members of the Congress did not venture at very great length, but on which, however, strong opinions were expressed, related to the diseases engendered by certain trades. The use of black aniline dyes has recently been found to be very dangerous; and there are of course the old enemies—lead, mercury, sizing, cotton and woollen dust, &c. The illnesses and the subsequent deaths caused by injurious occupations are far more frequent, far more disastrous, than accidents of a violent description. Nevertheless the Congress did not venture to make any proposals in this respect, though all felt, and felt strongly, that there was just as much reason to compensate for illness as for accidents. Doubtless, however, the members of the Congress thought that this phase of the question could with more advantage be treated at a Congress of Hygiene or of Forensic Medicine. Several valuable observations were made and figures given showing the exceptional prevalence of accidents to children in factories. These, it was said, were due to the carelessness, thoughtlessness, giddiness, and curiosity of the children. But, on the other hand, it was recognised that these were all the natural characteristics of youthfulness, and only proved that the monotony of factory work was not in keeping with the physical requirements of a young child. The real fault was due to the admission of such young children to the works. Apart from these questions, the Congress devoted the greater part of its time to debating the social, economical, and political consequences of compulsory insurance against sickness and accidents. This involved the examination and the criticism of the recent and sweeping measures taken in this respect by the German Legislature. The arguments for and against are certainly very complex, and the Congress, perhaps wisely, refrained from expressing by vote any opinion. Undoubtedly the German system has a very marked and direct bearing on the health of the population, and would supply the subject of a most useful investigation. Finally, the Congress resolved to form an international society for the purpose of collecting and of exchanging all documents bearing on the question of the prevention of accidents. The annual fee for membership is ten francs, and the address of the International secretary is M. E. Grunner, 6, rue Féron, Paris.

I will now resume my notices of the various exhibits, the continuity of which has been interrupted by the reports of the different Congresses. In a previous letter some of the articles of clothing exhibited were described, but still a great deal remains to be said and seen on this subject. Unfortunately it is not altogether easy to obtain the information which it is the object of an exhibition to supply. For instance, Messrs. Barlow and Jones of Manchester have an immense exhibit. There is a great variety of sheeting that would be of interest as bearing on the bedding of hospitals, and friction towels appertaining to the hygiene of the bath-room; but there is no one to open the case to show specimens or give information. The same cannot be said of Messrs. Robinson and Cleaver of Belfast. Here there are always attendants who lose no opportunity of displaying all the goods. Consequently it was not difficult to ascertain that this firm supplies a large quantity of linen for hospitals. Some of these linens are remarkably cheap, and seem of good quality. They have also some excellent grass-bleached diapers of very soft finish that may be recommended. Close by, Messrs. Haynes and Co. exhibit their well-known absorbent and medicated cotton wools. With regard to woollen fabrics, the exhibits of Messrs. Hunt and Winterbotham of Dursley may be mentioned. Under a rainbow-like array of clothes they show the woollen threads, and then the wool itself employed in manufacture. There is no glass case, everyone can examine the clothes for himself, and, as some of these are supplied for the uniforms of the English army, their quality becomes a question of national importance. Messrs. Tyler and Co.'s case contains unshrinkable flannels, jerseys, and various suits of knitted woollen clothes, which must be recognised as excellent for their porosity and warmth. Messrs. Le Gros Thompson and Son have a weatherproof silk crape that will commend itself to ladies in mourning; but, on inquiry, it appears that the weatherproof quality relates rather to the stains than to the wet which results from rain. Messrs. J. and J. Cash have friction towels and gloves for baths. They differ from most articles of this description, and seem more like a network made of tape. Whether this is or is not more effective, or whether its action on the skin is more stimulating, is a question that must be left in doubt, for there are no means afforded of testing the same. A little circular, with a small specimen attached, renders the patent of Walry's antiseptic canvas intelligible to all comers. This consists simply of a rough loose web-work or canvas well saturated in tar and pine oil. The canvas is then enveloped in two layers of perforated flannel, which is used for underclothing. The theory is that the skin is thus protected by an antiseptic, and also that, as the pores absorb the emanations of the tar, this may have a healing effect in some diseases. Scientific experiments should be organised to demonstrate positively these suggestions.

In the hosiery department, the use of wool for underclothing has greatly increased, and these exhibits show what progress modern theories on sanitary clothing have made. The difficulty is in ascertaining whether articles said to be pure wool are really what they are described to be. Customers cannot carry microscopes in their pockets when they are about to buy a pair of socks. For those (and their number is increasing every day) who want wool, and nothing but wool, a quick and easy method of testing should be devised. Perhaps the easiest test is to separate the warp from the woof, and hold both to a flame. Wool forms into an amorphous mass, leaves a shapeless ash, and does not flame any more when removed from the fire or light. Cotton, on the contrary, continues to burn steadily, and its ash retains the shape of the thread. It would be well for exhibitors to give the fullest information as to the purity of their wools and the absence of poisonous materials in the very brilliant colours they employ. In this scientific age, people, we are glad to note, are not satisfied with mere appearances. It does not suffice if an article of clothing looks well; it must also be free from any deleterious substance.

In respect to waterproofs, also, a great demand has arisen for the better ventilation of these garments. People are commencing to understand that the action of the skin is impeded by wearing an unventilated waterproof, and that the accumulation of foul damp air under the waterproof and the sudden transition produced by its removal, are so contrary to the general scheme of nature as to create greater dangers than the risks involved by getting wet in the rain. Thus almost every exhibitor boasts that he has some special and particularly effective method of ventilating his waterproofs. Messrs. Mandleberg and Co. have, for instance, a number of indiarubber tubes that pass up the back of their coats, these communicating with the outside at the seams. The tube in its course up the back has at every two or three inches' distance a small aperture, and thus these tubes form small ventilating shafts, just where most of the hot air accumulates. How far this is actually successful in practice I cannot say, having witnessed no experiments, but I am tempted to think that the india-rubber tubes are not stiff enough and might close up, if the wearer leant back against a wall or carriage seat. This company, in common with several other exhibitors, shows some very elegant silk and rubber air cushions that only weigh three ounces, and can fold in a little packet three inches square. When blown out they make excellent cushions or head-rests for travelling purposes, and are a very good protection against the vibration of railway trains. The North British Rubber Company has a stand where all kinds of travelling contrivances are exhibited, together with a sort of history of caoutchouc from the tree to the manufactured article. There are innumerable specimens of various forms of goloshes. In this also may be noted the progress of more scientific principles. Formerly the idea of keeping the foot dry was the only thought entertained. Hence the clumsy golosh that covered the whole of the foot up nearly to the ankle. Now, on the contrary, manufacturers are beginning to understand that the idea is to give as little caoutchouc and as much air as possible. Thus it is only the front sole and the seam of the boot that are covered. Under the instep the air may have full play, the heel is unprotected, its thickness is sufficient to resist the water, and under the arch a thin band holds the light golosh that is under the fore part of the foot. Speaking of foot covering,

Messrs. Hubert and Co. exhibit their hunting boots, with indelible coloured tops, which require neither scrubbing nor polishing, and can be cleaned by simply holding under a tap of water. To the lovers of hunting this is a great advantage, and it helps to keep the boot dry. Mr. George Cording, of London, has waterproofs ventilated by placing network under the cape, so that as long as the cape does not adhere too closely to the body there would be no difficulty for the hot air to escape. Messrs. Lee Brothers have a large show of woollen waterproof fabrics, of portable baths, buckets, basins, &c., all objects that would certainly be of interest, alike for medical, hospital, and general sanitary purposes. But their case is always closed; there is no agent or representative to give any explanation. I am puzzled to say what advantage there can be in exhibiting in such a manner that no one can judge the value of the object exhibited. Still, and in spite of such difficulties, there is something to be learnt by a visit to the textile section and the clothing exhibits of the British section.

Paris, Sept. 16th.

THE INFECTIOUS DISEASE (NOTIFICATION) ACT, 1889.

THE following is the text of a circular addressed by the Local Government Board to all district boards and vestries in the metropolis. The circular is accompanied by an order prescribing a form of notification for use by medical practitioners and a memorandum for their guidance.

Local Government Board, Whitehall, Sept. 13th, 1889.

SIR,—I am directed by the Local Government Board to draw the attention of the district boards to the provisions of the Infectious Disease (Notification) Act, 1889, which received the Royal assent on the 30th ult., and which, it is hoped, may materially assist the local authorities of England and Wales in checking the spread of infectious disease, by enabling them to obtain early and accurate information with respect to the cases of infectious disease occurring within their districts.

The Act will, after Oct. 30th, 1889, extend to every London district—that is to say, to the City of London and the several parishes and districts under the jurisdiction of the metropolitan vestries and district boards and the Local Board of Woolwich.

The local authorities for the purposes of the Act will be—in the City of London, the Commissioners of Sewers; in Woolwich, the Local Board of Woolwich; and in the remainder of the metropolis the vestries and district boards acting under the Metropolis Management Acts.

Section 3 of the Act provides that where an inmate of any building used for human habitation within a district to which the Act extends is suffering from an infectious disease to which the Act applies, then, unless such building is a hospital in which persons suffering from an infectious disease are received, the following provisions shall have effect—that is to say: (*a*) The head of the family to which such inmate (in the Act referred to as the patient) belongs, and in his default the nearest relatives of the patient present in the building, or being in attendance on the patient, and, in default of such relatives, every person in charge of or in attendance on the patient, and in default of any such person, the occupier of the building shall, as soon as he becomes aware that the patient is suffering from an infectious disease to which the Act applies, send notice thereof to the medical officer of health of the district. (*b*) Every medical practitioner attending on, or called in to visit the patient, shall forthwith, on becoming aware that the patient is suffering from an infectious disease to which the Act applies, send to the medical officer of health for the district a certificate stating the name of the patient, the situation of the building, and the infectious disease from which, in the opinion of such medical practitioner, the patient is suffering.

Every person required by this section to give a notice or certificate who fails to give the same will be liable on summary conviction in manner provided by the Summary Jurisdiction Acts to a fine not exceeding 40*s*. If, however, a person is not required to give notice in the first instance, but only in default of some other person, he will not be liable to any fine if he satisfies the Court that he had reasonable cause to suppose that the notice had been duly given.

A notice or certificate to be sent to a medical officer of health in pursuance of the above provisions may be sent by being delivered to him, or by being left at his office or residence, or may be sent by post addressed to him at his office or at his residence. Where, in any district of a local authority, there are two or more medical officers of health of the authority, the certificate must be given to such one of them as has charge of the area in which the patient referred to in the certificate is, or to such other of them as the local authority may from time to time direct.

It will be observed that Section 3 refers only to cases where the patient is an inmate of a building used for human habitation. Section 13 of the Act, however, declares that the provisions of the Act shall apply to every ship, vessel, boat, tent, van, shed, or similar structure used for human habitation in like manner, as nearly as may be, as if it were a building, and that a ship, vessel, or boat lying in any river, harbour, or other water not within the district of any local authority within the meaning of the Act, shall be deemed for the purposes of the Act to be within the district of such local authority as may be fixed by the Board, and where no local authority has been fixed, then of the local authority of the district which nearest adjoins the place where such ship, vessel, or boat is lying. This section will not, however, apply to any ship, vessel, or boat belonging to any foreign Government, nor will the Act extend to any building, ship, vessel, boat, tent, van, shed, or similar structure belonging to her Majesty the Queen, or to any inmate thereof.

The expression "occupier," which occurs in Section 3, is defined by Section 16 as including a person having the charge, management, or control of a building, or of the part of a building in which the patient is, and in the case of a house the whole of which is let out in separate tenements, or in the case of a lodging-house, the whole of which is let to lodgers, the person receiving the rent payable by the tenants or lodgers, either on his own account or as the agent of another person, and in the case of a ship, vessel, or boat, the master or other person in charge thereof.

Section 4 of the Act enables the Board from time to time to prescribe forms for the purpose of certificates under the Act, and requires any forms so prescribed to be used in all cases to which they apply.

The Board, in pursuance of this power, have issued an order, a copy of which is enclosed herewith, prescribing the form of certificate required by the Act to be sent to the medical officer of health by the medical practitioner.

The Board also enclose a memorandum for the information of medical practitioners, which they suggest might accompany each supply of forms of certificates.

The Act requires the local authority to gratuitously supply forms of certificate to any medical practitioner residing or practising in their district who applies for the same, and to pay to every medical practitioner for each certificate duly sent by him in accordance with the Act a fee of 2*s*. 6*d*. if the case occurs in his private practice, and of 1*s*. if the case occurs in his practice as medical officer of any public body or institution.

Where a medical practitioner attending on a patient is himself the medical officer of health of the district he will be entitled to the same fee as if he were not such medical officer.

Any expenses incurred by a local authority in the execution of the Act are to be paid as part of the expenses of such authority in the execution of the Acts relating to public health; but the greater part of these expenses, so far as they are incurred in respect of places within the Metropolitan Asylum district, will be recouped to the local authority if the directions of section 10 of the Act are observed, which provides that where a medical officer of health receives, in pursuance of the Act, a certificate of a medical practitioner relating to a patient within that district, he shall within twelve hours after such receipt forward a copy thereof to the managers, and that the managers shall repay to the local authority the amounts paid by the authority in respect of those certificates of which copies have been sent to the managers, as required by that section.

The infectious diseases to which the Act applies will in all cases include the following diseases: Small-pox, cholera, diphtheria, membranous croup, erysipelas, the disease known as scarlatina, or scarlet fever, and the fevers known by any of the following names—Typhus, typhoid, enteric, relapsing, continued, or puerperal. If the local authority of any district to which the Act extends desires that the Act shall in their district apply to any infectious disease other than the above, they may from time to time by resolution order that the Act shall in their district apply to such disease. In such a case, at least fourteen clear days before the meeting at which the resolution is passed is held, special notice of the meeting and of the intention to propose such resolution must be given to every member of the authority. The order embodied in the resolution may be permanent or temporary, and, if temporary, the period during which it is to continue in force must be specified therein, and any such order may be revoked or varied by the local authority by which the order is made. But no such order, or any revocation or variation of it, will be of any validity until approved by the Board.

When it is so approved the local authority must give public notice thereof by advertisement in a local newspaper, and by handbills, and otherwise in such manner as they think sufficient for giving information to all persons interested. They must also send a copy thereof to each registered medical practitioner whom, after due inquiry, they ascertain to be residing or practising in their district.

The order will come into operation at such date not earlier than one week after the publication of the first advertisement of the approved order as the local authority may fix.

In the case of emergency the resolution may be passed at a meeting of which three clear days' notice has been given. In any such case the resolution must declare the cause of the emergency and be for a temporary order, and a copy of the resolution must be forthwith sent to the Board and advertised, after which the order will come into operation at the expiration of one week from the date of the advertisement. But unless approved by the Board it will cease to be in force at the expiration of one month after the resolution is passed, or such earlier date as may be fixed by the Board.

As the Act will take effect in the metropolis on Oct. 30th next, the local authority should, as early as practicable, furnish every medical practitioner residing or practising in their district with the forms of certificate which have been prescribed, and the Board suggests that they should, without delay, take such steps as may appear to them to be most convenient for giving notice of the requirements of the Act to the inhabitants of the district. Judging from the experience of a large number of provincial towns in which provisions similar to those contained in the Act have been put in force by means of local Acts, the Board do not anticipate that the local authority will have any practical difficulty in securing a due compliance with the provisions of the statute, and the Board feel assured that the authority will take such action in connexion with the notifications which they will receive as will materially assist in checking the spread of infectious disease in the metropolis.

I am, Sir, your obedient servant,

HUGH OWEN, Secretary.

ST. THOMAS'S HOSPITAL OLD STUDENTS' DINNER. The annual dinner will take place on Tuesday, Oct. 1st, 1889, at 6 for 6.30, in the Governors' Hall, St. Thomas's Hospital (entrance from Westminster-bridge), Dr. John Harley in the chair.

LITERARY INTELLIGENCE.—Dr. Sakhnovski, Medical Inspector of the province of Kieff, is about to bring out a new monthly journal dealing with epidemics, entitled the *Epidemicheski Listok*.

Public Health and Poor Law.

LOCAL GOVERNMENT DEPARTMENT.

REPORTS OF MEDICAL OFFICERS OF HEALTH.

Epping Rural District.—Mr. T. Fowler gives in a tabular form an account of the cases of infectious diseases that have occurred, together with a statement as to the action taken with regard to each, the latter including, in one instance, successful proceedings against a person for moving a scarlatina patient whilst still in an infectious condition. The drainage of the populous parts of the district has been completed, with the provision of a system of sewerage for Chingford, and a large amount of sanitary work is now regularly carried on for the abatement of nuisances, and for generally improving the health of the district. The sanatorium was useful during the year for the isolation of cases of scarlatina, but its usefulness would be increased by the provision of proper means of disinfection. The death-rate for 1888 was 15·5 per 1000 living.

Tendring Rural District.—The general death-rate for the last year in this district was 16·7 per 1000, and the increase which this represents over the rate for last year is regarded by Dr. J. W. Cook as in part due to excess of deaths amongst infants and young children. There has been a further extension of sewers at Brightlingsea, during the progress of which both enteric fever and diphtheria have diminished, but the privy accommodation in that town is of a very bad and unwholesome sort. Parkeston and Frinton-on-Sea now have good water, but the former place stands much in need of sewerage. Indeed, seaside resorts have been springing up which call for the earnest attention of the authority as regards their efficient sanitation.

Lewes Urban District.—Mr. Braden gives the general death-rate for 1888 as 14·5 per 1000, and points out that the zymotic rate has been but small. He refers to the simultaneous appearance of three cases of enteric fever, each being single attacks in households, and each occurring in widely different parts of the town, and he explains that he could find no cause for them. He evidently inclines to the view that they arose *de novo;* but in the absence of any condition favouring pollution of air or water, it is not clear what the circumstances are which in this case led to the origin of an infectious and specific disease. The need for the proper sewerage of the district known as Cliffe is adverted to; it is a low-lying area, and the culverts show signs of decay. The infectious hospital was found useful during the year, the water-supply is good and plentiful, and good sanitary work goes on week by week.

Kendal Urban District.—Mr. Charles Paget, until recently health officer for Kendal, gives last year's general death-rate as 17·3 per 1000. Midden-privies still cause nuisance in the town, but every year a greater readiness is experienced in getting rid of these structures. Proper construction of house drains, in so far as disconnexion and ventilation are concerned, is enforced in new houses, and a good deal of remedial work is carried out in existing houses where drain defects are discovered. A smart outbreak of diphtheria took place, and with one exception all the cases occurred near a canal in the flattest and lowest lying portion of the town, where a heavy fog had hung about with much persistency. Seven deaths resulted. The merits and value of the Sanatorium were put to the test during the year, with satisfactory results.

Ramsgate Urban District.—On an estimated population of 25,260 the death-rate for 1888 is calculated as 15·5 per 1000, which is lower than any rate during the present decennium; the zymotic rate was also exceptionally low—namely, 1·1 per 1000. Dr. Styan also contends that the deaths from consumption are singularly few amongst the inhabitants, although cases occur amongst strangers. In some cases of diphtheria and enteric fever sanitary defects were found in the houses, the defects being of a sort that would to a large extent have been obviated by a house-to-house inspection, such as is needed, above all things, in health and pleasure resorts. But the limitation in the number of cases of such diseases is regarded as a satisfactory testimonial to the efficacy of the existing sewerage system.

Truro Urban District.—The city of Truro had a low death-rate of 14·0 per 1000 last year, as opposed to an average of 19·67 for the period 1876–87. Mr. Sharp also finds that the occasional cases of enteric fever which occur are not, so often as they were, precursors of serious outbreaks, and this change he attributes to the increased supply of wholesome water and improved drain construction. At the same time improvement is needed as regards the ventilation of the public sewers, and it is important that the question of the ultimate disposal of the sewage should be dealt with. In summer weather the river Kenwyn is in a filthy state, and the stream, or rather the absence of a sufficient stream of water to wash away the filth, is a source of dangerous nuisance, especially to those inhabitants living near its banks.

Hanley Urban District.—It is somewhat difficult to estimate the population of the borough of Hanley, but setting it down as 55,520, the death-rate for 1888 would be 20·7 and the zymotic rate 4·6 per 1000, whilst the mortality under one year of age would be equal to 19·3 per cent. of the registered births, which is certainly excessive. Measles of a severe type accounted for some of this mortality, and school closure, which is stated to have been immediately followed by a diminution in the mortality, had to be resorted to. One case of enteric fever is stated to have been distinctly traced to the milk-supply, the cow-house and premises being in a most deplorable condition. It is, however, not explained in what way the specific pollution was received by the milk, nor whether others besides the one case of enteric fever used the same supply. Isolated cases of enteric fever from milk pollution are, to say the least, extremely rare. The common lodging-houses and the bakehouses seem to be well looked after and to be in a good sanitary condition. The system of compulsory notification of infectious diseases is reported to have worked well, and to have advantages beyond the mere acquiring of knowledge as to the existence of disease in individual houses. Fowler's closets are reported to have been increased in number. As a substitute for privy nuisances they have doubtless effected good, and though we cannot regard them as embodying the principles required in a proper closet, we are glad to note the testimony of Dr. J. S. Walker that they appear to add to the wholesomeness of the localities in which they are placed in Hanley.

VITAL STATISTICS.

HEALTH OF ENGLISH TOWNS.

In twenty-eight of the largest English towns 5443 births and 3062 deaths were registered during the week ending Sept. 14th. The annual rate of mortality in these towns, which had declined in the preceding four weeks from 19·2 to 16·2 per 1000, rose again last week to 16·7. During the first eleven weeks of the current quarter the death-rate in these towns averaged 18·8 per 1000, and was 1·6 below the mean rate in the corresponding periods of the ten years 1879-88. The lowest rates in these towns last week were 13·2 in Derby, 13·3 in Brighton, 13·4 in Salford, 13·7 in Birkenhead, and 14·2 in Bradford and in Leicester, The rates in the other towns ranged upwards to 26·7 in Blackburn, 27·0 in Halifax, 27·5 in Preston, and 31·4 in Plymouth. The deaths referred to the principal zymotic diseases, which had declined in the preceding four weeks from 811 to 512, rose again last week to 529; they included 272 from diarrhœa, 72 from scarlet fever, 56 from diphtheria, 54 from "fever" (principally enteric), 45 from whooping-cough, 30 from measles, and not one from small-pox. These zymotic diseases caused the lowest death-rates last week in Birkenhead and Norwich, and the highest rates in Newcastle-upon-Tyne, Blackburn, Preston, and Plymouth. The greatest mortality from diarrhœa occurred in Plymouth, Hull, Newcastle-upon-Tyne, Blackburn, and Preston; from scarlet fever in Oldham, Huddersfield, Bolton, and Plymouth; from "fever" in Preston and Nottingham; from whooping-cough in Huddersfield; and from measles in Newcastle-upon-Tyne. The deaths from diphtheria included 41 in London, 2 in Manchester, and 2 in Derby. Small-pox caused no death in any of the twenty-eight great towns; and no small-pox patient was under treatment at the end of the week either in the Metropolitan Asylum Hospitals or in the Highgate Small-pox Hospital. The number of scarlet-fever patients in the Metropolitan Asylum and the London

Fever Hospitals at the end of the week was 1111, against numbers increasing in the preceding eleven weeks from 559 to 1021; 151 cases were admitted to these hospitals during the week, against 98, 136, and 121 in the previous three weeks. The deaths referred to diseases of the respiratory organs in London, which had been 148 and 142 in the preceding two weeks, rose again last week to 152, but were 48 below the corrected average. The causes of 68, or 2·2 per cent., of the deaths in the twenty-eight towns last week were not certified either by a registered medical practitioner or by a coroner. All the causes of death were duly certified in Manchester, Bristol, Bradford, Nottingham, and in five other smaller towns; the largest proportion of uncertified deaths were registered in Sheffield, Liverpool, Huddersfield, and Salford.

HEALTH OF SCOTCH TOWNS.

The annual rate of mortality in the eight Scotch towns, which had been 18·1 and 16·5 per 1000 in the preceding two weeks, rose to 19·1 in the week ending Sept. 14th; this rate exceeded by 2·4 the low rate that prevailed during the same week in the twenty-eight large English towns. The rates in the Scotch towns ranged from 12·5 in Paisley and 15·0 in Edinburgh to 22·7 in Aberdeen and 23·6 in Dundee. The 488 deaths in the eight towns showed an increase of 65 upon the number in the previous week, and included 38 which were referred to diarrhœa, 13 to whooping-cough, 11 to "fever" (typhus, enteric, or ill-defined), 9 to measles, 5 to diphtheria, 3 to scarlet fever, and not one to small-pox; in all, 79 deaths resulted from these principal zymotic diseases, against 91, 74, and 66 in the preceding three weeks. These 79 deaths were equal to an annual rate of 3·1 per 1000, which exceeded by 0·2 the mean rate last week from the same diseases in the twenty-eight English towns. The fatal cases of diarrhœa, which had been 48, 31, and 24 in the preceding three weeks, rose again last week to 38, of which 17 occurred in Glasgow, 8 in Edinburgh, 4 in Dundee, and 4 in Aberdeen. The 13 deaths from whooping-cough showed a further decline of 5 from the numbers in the previous two weeks, and included 6 in Glasgow, 4 in Edinburgh, and 2 in Dundee. The 11 deaths referred to "fever" exceeded the numbers in recent weeks; 4 were returned in Glasgow, 4 in Dundee, and 2 in Edinburgh. The fatal cases of measles, which had been 13, 7, and 3 in the preceding three weeks, rose again last week to 9, of which 5 occurred in Glasgow and 3 in Leith. The 5 deaths from diphtheria were fewer than in recent weeks, and included 2 in Glasgow and 2 in Edinburgh. The deaths referred to acute diseases of the respiratory organs in the eight towns, which had been 55 and 54 in the preceding two weeks, rose last week to 61, but were 14 below the number returned in the corresponding week of last year. The causes of 47, or nearly 10 per cent., of the deaths registered in the eight towns during the week were not certified.

HEALTH OF DUBLIN.

The death-rate in Dublin, which had been 26·6 and 18·6 per 1000 in the preceding two weeks, rose again to 24·5 in the week ending Sept. 14th. During the first eleven weeks of the current quarter the death-rate in the city averaged 22·8 per 1000, the mean rate during the same period being 16·6 in London and 15·6 in Edinburgh. The 166 deaths in Dublin showed an increase of 40 upon the low number in the previous week; they included 15 which were referred to diarrhœa, 4 to "fever" (typhus, enteric, or ill defined), 1 to scarlet fever, and not one either to small-pox, measles, diphtheria, or whooping-cough. Thus the deaths from these principal zymotic diseases, which had been 33, 33, and 15 in the preceding three weeks, rose again last week to 20; they were equal to an annual rate of 3·0 per 1000, the rate from the same diseases being 2·1 in London and 3·3 in Edinburgh. The deaths referred to diarrhœa, which had been 26 and 11 in the previous two weeks, rose again last week to 15; and the deaths referred to "fever" also exceeded the number in the previous week. The deaths, both of infants and of elderly persons, exceeded the numbers returned in the previous week. Four inquest cases and 2 deaths from violence were registered; and 36, or nearly a quarter, of the deaths occurred in public institutions. The causes of 35, or more than 21 per cent., of the deaths in the city were not certified.

Correspondence.

"Audi alteram partem."

NOTIFICATION OF INFECTIOUS DISEASES.

To the Editors of THE LANCET.

SIRS,—I feel that I must spare a few precious minutes of a very short holiday to make two or three observations on Mr. Biddle's letter to you. He speaks of my "attack," and of my saying "unpleasant things." I think it is altogether the other way, and that it is I who ought to complain. I wrote a short letter to *The Times* in support of Dr. Farquharson's views, and stating my opinion on the subject, an opinion formed after a careful investigation. Mr. Biddle wrote, styling my letter "a very good specimen of its class," and saying that Mr. Ritchie had plenty of such in his pigeon-holes, or words to that effect. I was thus obliged to *defend* my views, and I did so in a letter which *The Times* has evidently considered as conclusive; and this is what Mr. Biddle calls my attack! As to saying "unpleasant things," truths are often unpleasant, and a correspondent who makes remarks in the bad taste—to put it mildly—of those I have quoted above, has no right to expect one to go out of one's way to say things as pleasantly as possible. He complains in his letter to you of my having "misquoted" him, whereas it is obvious from his quotation from my letter that I did not quote him at all (with the exception of seven words), but that I merely summarised his argument, and he does not complain that my summary was an unjust one. Of course, if 1000 deaths from a particular disease in a town are reduced to 950, and in another town 50 are reduced to 0, the same number of lives—viz., 50—are saved in each town; but to argue that the importance of the result is the same is very much like arguing that if one man has £1000 and loses £50 it is of the same importance to him as it is to a man who has £50 and loses all. The relative importance is in each accurately expressed, not by the "difference," as Mr. Biddle contends it should be, but by the "proportion." It is not fair to compare the general death-rates of London and Manchester in an argument about the relative advantages of "single" and "dual" notification, if only on account of the essential difference in their methods of excrement removal; and it is perfectly absurd to suggest that because, for instance, scarlet fever has been epidemic in certain towns where there has been dual notification, this fact is due to the system of notification. The death-rate from diphtheria has increased enormously in London in recent years. This is certainly not due to dual notification. Is it due to the want of it?

I am, Sirs, your obedient servant,

Bexhill, Sept. 17th, 1889. W. H. CORFIELD.

THE MAYBRICK CASE.

To the Editors of THE LANCET.

SIRS,—I regret that my letter on the Maybrick case should have given Dr. Norman Kerr such a shock that amazement would be a trivial expression of his feelings. There is not much to answer in his letter. I do mean that Mr. Maybrick was first dosed with arsenious acid and afterwards with arsenic in solution, but for some two or three days before his death he got no arsenic; that would be another reason why so little was found in the body. Again, I do not think the indictment would be invalid if Mrs. Maybrick had been accused only of administering the poison in solution, and it had been proved to have been given in the solid form. With regard to the large quantity of arsenic found in Mrs. Maybrick's possession, thereby no doubt "hangs a tale" which has not been cleared up. If Mrs. Maybrick knew nothing about it, why did she not indignantly repudiate any knowledge of it when she made her statement? Dr. Norman Kerr's critical mind suggests to him that some member of Mr. Maybrick's family or the nurses may have deposited the arsenic where it was found; if this were so, it could only have been done with a view of inculpating Mrs. Maybrick. What those persons have done to lay themselves open to such a horrible suspicion I quite fail to see. I agree with Dr. Norman Kerr that an intelligent Scotch jury would have probably found a verdict of "Not guilty"; but an equally intelligent English jury had no such opportunity of shirking a responsibility which was

thrust on them, and, in accordance with the national character, they boldly did their duty to the best of their ability, and their verdict has been approved by most persons of robust mind and understanding. Again, I agree that the Home Secretary did wisely in giving way to some extent to the clamour of the multitude. In such affairs a crisis will sometimes arise where public opinion seems to lose its head and runs riot with emotion or sentimentality. This sort of agitation cannot be altogether disregarded either in politics or otherwise. The Tichborne case was one in point, the Lipski case another, and now the Maybrick case has run its course; but I venture to predict that if the position of the present Home Secretary be as permanent as the position of Dr. Norman Kerr is stated to be in his letter, the latter gentleman will have to wait a very long time before his desire is gratified—viz., that the prison door be open to Mrs. Maybrick.—Yours obediently,

The Sanctuary, S.W., Sept. 18th, 1889. THOMAS BOND.

To the Editors of THE LANCET.

SIRS,—Kindly allow me to correct an error in Mr. Allen's letter of the 14th. He states: "Mrs. Maybrick added a *white* powder to the meat extract." I have her statement before me, and she never said anything about *white* powder. This was an addition by the press. What she did say was: "When I found the *powder* I took it to the inner room, and in pushing through the door I upset the bottle," &c. The importance of pointing out what may appear to some a trivial matter is this. Some people think that if it was a white powder it was of necessity arsenic. Now, as Mr. Allen himself points out, if this powder was arsenic it would have remained undissolved. We are then positively certain that this powder was *not* arsenic, and that therefore the admission of evidence to this end was with no other object than to blind the jury to the real issue. Your correspondent suggests that Mrs. Maybrick attempted to filter arsenic mixed with soot through a handkerchief. It is monstrous to assert that this woman had any technical knowledge of filtration, however crude, and it is just such misconceptions which have placed her where she is. The prosecution relied on three things for a proof of administration of arsenic: (1) the presence of 1 gr. of arsenic in meat juice, which the deceased never had; (2) the presence of $\frac{1}{1000}$ gr. in a pan at his office, which he never used; and (3) the presence of $\frac{2}{3}$ gr. of arsenic in a glycerine bottle. Siebold (editor of the *Pharmaceutical Report*), at a meeting of the British Pharmaceutical Association held at Newcastle last week, proved that glycerine abstracts As_2O_3 from certain manufactured glass after long standing. This is an important statement, and I must refer your readers to his paper. As to Mrs. Maybrick's guilt or innocence I do not express any opinion; but I do say that in a case involving so many medical, legal, and analytical doubts the only course is to liberate her, and if there is any fresh evidence against her, to re-arrest and re-try her, and not let her be unconstitutionally sentenced for a crime—"attempt to murder"—which was not before the Court.

I am, Sirs, yours truly,

W. H. COATES, M.B., L.S.Sc., F.C.S., M.R.C.S.

Highgate, Sept. 17th, 1889.

To the Editors of THE LANCET.

SIRS,—Your correspondent, Dr. Kerr, in the parallel which he has drawn between the case of Mrs. Maybrick and that of Madeleine Smith, and his inference that the same "intelligent" jury which acquitted the latter would also have done so with the former, overlooks or ignores an important distinction between the two cases. In Madeleine Smith's case there was a doubt as to whether she had administered the poison at all or not; while in the other case neither the Home Secretary nor the jury had the shadow of a doubt on this head. This, I believe, accounts for the different verdict in the two cases. I do not mean to enter into the merits of the recent case—everyone has already had ample means of forming a judgment on the subject. I would only say that I think the Liverpool jury, being convinced that the prisoner had administered poison with intent to kill, did well in holding her responsible for the fatal event which followed, all medical cavilling to the contrary notwithstanding. If a Scotch jury had not done the same in similar circumstances they would have shown little claim to be possessed of that intelligence with which your corresnpodent credits them.—Yours truly,

Partick, Glasgow, Sept. 16th, 1889. ROBERT KIRK, M.D.

"FIVE RECENT CASES ILLUSTRATIVE OF CEREBRAL SURGERY."

To the Editors of THE LANCET.

SIRS,—Under the above heading there is a case (No. 1) recorded in your issue of Sept. 14th which is rather remarkable for its rarity, particularly as complete recovery took place, notwithstanding a bullet remaining lodged in the cranial cavity. With your permission, I will state a case, which has never been recorded, and which I think is most remarkable and unexplainable—to me, at all events. To your readers I shall leave the explanation, hoping that each one may satisfy himself.

Eighteen months ago I was summoned in great haste to the house of a farmer, whose child, I was informed, had been accidentally shot by his brother. I went, and saw the boy—aged about nine years—within a quarter of an hour of the occurrence. His condition was this. He lay on his left side, with his head bent, his chin touching his chest, his legs drawn up and flexed on the thighs, which were touching the abdomen; his breathing was slow, laboured, and slightly stertorous; pulse 50; temperature normal. He was quite unconscious, and I could not rouse him till at the expiration of about twenty minutes, when, on speaking loudly to him and slightly shaking him, he muttered something in great irritation and relapsed into his former state. His right eye was cleanly knocked out, the eyelids a little black and swollen, and immediately over the malar bone of the same side there was a swelling about the size of a pullet's egg. Having observed his condition, as previously described, I obtained the history of the accident, as follows. Four of the children, ranging in ages from twelve to four, happened, while playing in the bedroom, to find a revolver loaded in all its chambers. The oldest child took it to examine, and in doing so, one of the chambers accidentally went off. The other brother—the subject of this case—happened to be standing within a yard and opposite to him, and immediately fell, remaining there in the condition I have previously described as finding him in. Thinking the case was hopeless, I said so, but at the same time sent for my principal, a man of large experience and great tact. When he arrived, he examined the child, as I had previously done, and he came to the conclusion that the bullet must have penetrated the skull through the optic foramen, in the track of the optic nerve, and no doubt was lodged in the brain—where, we could not think. I had previously examined the room where the accident took place, hoping that the bullet might have impinged against some irregularity in the orbital cavity, made a sort of irregular curve, destroying the eyeball, and coming out again, and therefore not entering the cranial cavity at all. On examining the orbital cavity with my finger I could find no irregularity whatever either on the floor, roof, or either side, but could feel the pulsation of the vessels at the foramen lacerum anticum. My principal said that we must not interfere, but wait to see if the boy would rally, firmly believing that it was only a matter of a few hours at most with him to live. After waiting for three hours the boy became sick and vomited some food which he had partaken of some short time previously, and, having vomited, he sat up, looked with his one eye, dazed, and called for a cup of tea. This he had, and after having taken it he commenced to chat and talk as if nothing had happened. We put him to bed, but having left the place I learned afterwards that he would not stay there, but got up and walked about, and did as the other children. Though he was seen twice a day, his temperature carefully taken, and all the other usual symptoms watched for, the result was negative. Not the slightest fever, no pain, no loss of appetite, no headache, no more vomiting, motions and urine passed regularly and normal, was the result day after day from that time up to now. Even with the eye being made a pulp of, one would expect some little fever and constitutional disturbance, but there was not a trace of either. The swelling over the malar bone went down in less than twenty-four hours, and the eyelids, which were not even scratched, had regained their normal colour in a few days, and with the exception of a slight discharge from the cavity of the orbit, which continued for a week, the boy was practically well in three hours after receiving his injuries. That the bullet entered the cranial cavity I have not the slightest doubt, but where it can have lodged without producing even headache, much less paralysis or any of the other well-marked signs of brain irritation, I must leave, like your corre-

spondent, to Ferrier, Horsley, or Macewen, hoping that they or some one of your numerous readers might be able to throw some light on, to me, an inexplicable case.

I may add that there was no bleeding whatever. A bullet taken from one of the other chambers was conical in shape, and its greatest diameter was less than a quarter of an inch. On discharging one of the chambers at three yards' distance, the bullet went almost through a quarter-inch board. I am, Sirs, yours truly,

Osnaburgh-st., Regent's Park. J. J. CLARKE, L.S.A., &c.

A SERIES OF CASES OF PUERPERAL FEVER.

To the Editors of THE LANCET.

SIRS,—On July 24th of this year a midwife attended an ordinary confinement; the woman died a few days after. On July 30th she was called to another, and found the woman lying on the floor confined. She removed the after-birth, and the woman died on Aug. 2nd. An inquest was held, preceded by a post-mortem, and the death certified as "puerperal fever." On the 7th she was called to another, examined her, and after a while, saying that the case was a difficult one, sent for a medical man, who delivered the patient, and she died a few days after of puerperal fever. On the 14th another case was attended by her, which also ended fatally a few days after. On Sept. 8th another confinement occurred in the top room of her own house. She was with the patient—her own daughter—for an hour before sending for another woman (her sister) to act. The midwife did not actually accouche her daughter, but her daughter died of puerperal fever on the 13th.

The connexion between these cases is so obvious that I think it calls for no remark from me, but the following fact may throw some light upon the cause of the first case. The midwife was suffering from specific disease in the tertiary stage, and about the 28th of July had a large piece of loose necrosed bone—the stench from which was abominable—removed from the roof of her mouth. This bone had been exposed for at least a month. Had she been fidgetting this piece of bone about with her finger, and conveyed septic material to her patient?

I am, Sirs, yours faithfully,

RUSSELL M. TALBOT,

Bow-road, Sept. 1889. Medical Officer of Health, Bow and Bromley.

DIPHTHERIA AND ITS TREATMENT.

To the Editors of THE LANCET.

SIRS,—In your issue of Aug. 24th, I find that Dr. Henderson expresses himself as not satisfied with my paper upon the Eliminative Treatment of Diphtheria, in not being sufficiently effectual for the entire expulsion of all the microbes supposed to be attached to the mucous membrane of the gastro-intestinal tract; for he states that in my commencing the treatment by "administering an emetic, followed by an aperient," he fails to comprehend "how a single evacuation of their contents can be of any service at all." It is evident that he has failed to grasp the general view which my treatment is calculated to effect; he should understand that the mustard emetic is not only an effectual evacuant, but it is likewise an excellent germicide. Again, I suggested that this be followed in due course by two doses of the liquor hyd. perchloridi in strong peppermint-water, which is acknowledged to be a most decided germicide as well as a specific alterative and aperient; this is to be followed by a dose of castor-oil. This treatment will effectually destroy and remove the microbes and their spores from the stomach, œsophagus, and fauces, as well as the intestinal tract. I quite approve of the application of his solution of corrosive sublimate; it is one of the remedies I recommended in a former paper; and, with the exception of two or three cases, I was satisfied with the throat application once a day, as being all-sufficient. Dr. Henderson tells us he is attached to the Birmingham Children's Hospital, which would enable him to watch more closely than one could possibly do in private practice.

I regret to learn that he does not agree with me that "tonics and stimulants in the early stage should not be given." In my letter to THE LANCET of November, 1880, I endeavoured to show what unfortunate results followed upon the tonic and stimulating plan adopted in the April of that year in one of the largest London hospitals. Five cases are carefully recorded in your journal—viz., four children, who succumbed under the above treatment within three days; and a probationer aged thirty-three, who had been in her usual good health, but had been in attendance for two days upon two of the fatal cases of diphtheria; she was taken ill with sore-throat on the evening of April 23rd, and in three days she died under similar tonic and stimulating treatment, aided by most assiduous attention from the physicians. I was in hope that this report would have proved a lesson to the profession to withhold such treatment, which doubtless it did with those who perused my paper at the time, although I believe there are many practitioners who still hold to this unscientific and unsuccessful plan of treatment.

When in general practice in Tottenham for several years, I had upon an average half a dozen cases annually to treat, the locality being rather low and damp. I attributed these cases at that time to aerial infection, through a fungus floating in the atmosphere depositing itself upon the tonsils and soft palate, which I at once attacked with a strong solution of nitrate of silver (one drachm to the ounce), and with a camel's-hair brush removed as much as the patient could tolerate, and at each subsequent visit, until the whole was removed. Finding there was a febrile condition present with nausea in many cases, I commenced with a dose of calomel and an aperient, for I found the secretions in a vitiated state; this was succeeded by salines, diaphoretics, and diuretics, in order to aid nature in eliminating the *materies morbi* from the system under which it appeared to be so oppressed and distressed. With this plan of treatment, the patients, being supported with nutritious and unstimulating diet, gradually improved towards convalescence. *Ergo*, for many years I used to look upon diphtheria as a curable disease if called in tolerably early to arrest its progress.

In order to prove the success the above treatment has met with in my hands, having lost but two cases during thirty-five years of active practice, the registrar's book of Tottenham can show but one death from diphtheria as attended by me, and one at Dalston. In each of these cases the delicate children had been ill two or three days before I was called in, when I found the disease had travelled into the windpipe.

I am, Sirs, yours faithfully,

EMANUEL MAY, M.D., M.R.C.P. Lond.

Fairholme, Hanwell, Sept. 2nd, 1889.

PREVENTION OF INFECTIOUS DISEASE.

To the Editors of THE LANCET.

SIRS,—Dr. F. P. Atkinson's suggestion—and I see from a letter in to-day's *Times* from Mr. Wootton Isaacson, M.P., that the latter purposes to legislate on much the same lines—is excellent as far as it goes. But it would fail entirely unless some better provision were made than exists at present to ensure the competence of the certifier. As the holder of a "recognised public health diploma" myself, I do not claim to *thoroughly* understand the practical details of the Builders Act, nor do I think that members of our profession ought to be called upon to test the soundness of drains or the perfection of connexion and disconnexion. What we want is a class of practical sanitary experts, whose competence shall be guaranteed by a sound theoretical and practical examination—men who should hold a middle position between the medical sanitarian and the engineer, and of such social position as to ensure them against all possible suspicion of being subject to undue influence of any kind. The examination should be enforced by law. It is no more right that an uneducated man (such as are many of the surveyors employed by local boards and analogous bodies) should be permitted to endanger the lives of the public than that lawyers and doctors should be allowed to practise without qualifications.

I am, Sirs, yours faithfully,

C. H. ALLFREY, M.D., F.R.C.S., D.P.H. Camb.

St. Mary Cray, Sept. 4th, 1889.

CASE OF TETANUS OCCURRING TEN DAYS AFTER DELIVERY.

To the Editors of THE LANCET.

SIRS,—I have been very much impressed, on reading the above remarkable case in THE LANCET of August 17th, by Mr. Henry Peacock of Gloucester, as I have not seen

a case mentioned in any obstetric work. Although it is quite possible to have been traumatic tetanus, still I am more inclined to the opinion that it was a true case of idiopathic tetanus, induced by insanitary surroundings, more especially when puerperal disease had been prevalent in the neighbourhood for some months previously. If Mr. Peacock traced each one of these puerperal cases to its proximate cause he would find the same results. I have seen a case of idiopathic tetanus in one of the lower animals (a mare of my own) induced by a deplorably defective sanitary condition of my stable, &c. My groom had a little boy who was in the habit of carrying sugar to the manger both before and during the mare's illness, who thus contracted blood poisoning. Singular to say, death resulted in both cases about the same time. I am sure you will agree with me that there should be a thorough and searching investigation into the sanitary condition of Gloucester, as I am convinced that the houses must be in a most unwholesome state. I am, Sirs, yours obediently,

Whitby, Aug. 22nd, 1889. JOHNSON HERBERT.

LUNACY CERTIFICATES.

To the Editors of THE LANCET.

SIRS,—My attention has been called to the following sentence in a leading article in THE LANCET of June 15th, 1889, dealing with an address by Dr. Cosby Morgan at the late Inter-Colonial Conference at Melbourne: "The Lunacy Act is supposed, by its interpretation clause, to require that medical men certifying be properly qualified, but Dr. Morgan has recently seen a case in which the certificate was signed by an unqualified medical man, 'being also a justice and a coroner.'" The inference is that a patient was admitted into a hospital for the insane on such a certificate, and this I am quite sure my friend Dr. Morgan did not intend. Unqualified practitioners have in two or three cases within my knowledge signed lunacy certificates in this colony (I believe such a thing is not unknown in England), but I can vouch for it that these certificates have been as promptly rejected here as they have been in the old country, and that the Lunacy Act which does not compare unfavourably with that in force in England is strictly administered by the officers charged with the duty.

I am, Sirs, your obedient servant,

F. NORTON MANNING, M.D.,
Inspector-General of the Insane and Medical Adviser to the Government.

Gladesville, N.S.W., July 25th, 1889.

"HINTS TO STUDENTS BEGINNING."

To the Editors of THE LANCET.

SIRS,—I am glad to note that others agree with my advice in the Students' Number. Dr. Theodore Maxwell and myself are quite at one as to its being the *general practitioner* with whom the student ought to reside from the outset of study. With the exception of a few localities throughout the English-speaking world, the word *physician* is synonymous with *general practitioner*, and it is of course in that sense I used it. The student residing with a physician in general practice can be assisted with his studies, learn all the routine duties, see cases outside which illustrate and enable him rightly to understand class lectures and theory in books, and lays the foundation for splendid moral qualities—e.g., self-reliance, presence of mind, &c.,—which assistance at post-partum and other serious cases evoke. Besides, the present faulty curriculum gives no true and complete picture to the beginner of his future work, except in a very partial manner during the *last* year. So, after spending much time, money, and trouble, the student finds it too late to retire from medicine if the profession is uncongenial; whereas residence with the practitioner gives him from the commencement some experience of night work, midwifery, infantile convulsions, book-keeping, &c., and if the duties are distasteful he can withdraw at the end of his first session. If the student really wishes to learn his profession, he must work with, and alongside of, his principal.—Yours faithfully,

Sept. 18th, 1889. EXPERENTIA DOCET.

UNIVERSITY COLLEGE, DUNDEE.—The sum of £9000 has been subscribed towards the £15,000 required to found a chair of Physiology in this College.

NORTHERN COUNTIES NOTES.

(FROM OUR OWN CORRESPONDENT.)

The British Association.

THE visit of the British Association to Newcastle has been on the whole a success. It is true that numerically it hardly comes up to the expectations of some of its most sanguine promoters, but, on the other hand, its general interest or attendance at the sections has been rarely exceded. It is as well to mention that the handsome baronial chair used for the first time by Professor Flower on assuming the presidency was a gift of Professor Philipson to the College of Medicine. The carving is elaborate, and was the work of a local artist of high repute, Mr. Elijah Copland. Saturday last saw a very large number of visitors off to Durham where a convocation was held and degrees were conferred, amongst others, on Professor Flower, Professor J. S. Burdon Sanderson, and Professor Turner. The various works in this city and vicinity received a due share of attention, but I believe the great manufacturing works of Armstrong, Mitchell, and Co., Elswick, were viewed by no less than 250 visitors. Among the excursions, Wallington, the seat of the Trevelyans, appeared to be one of the most popular. Wallington has been long famed for its warmth of hospitality, and, indeed, this feature has passed into song and tradition. Leland calls Wallington "the chefist house of the Fenwicks," who lived there until 1689, in great splendour and hospitality. "Show us the way to Wallington," was once a popular air with the Northumbrian pipers. It is strange how old customs survive now we have the philosophers of the "wise week" making all haste to Wallington, as prudent travellers did centuries ago. I cannot leave the Association meeting without alluding to the handsome accommodation afforded in the way of reception rooms by the College of Medicine here. This very fine new building was placed at the disposal of the Association, and was admirably adapted to its purpose, every want of visitors being amply provided for. The College itself is to be formally opened and devoted to its legitimate purposes on Oct. 2nd. A long list of invitations has been issued, and it is to be hoped that the College will have a prosperous career worthy of its noble building.

Newcastle Hospital Sunday Fund.

The annual meeting of the Newcastle Hospital Sunday Fund has been held. It appears that there has been a decrease in the church collections, but an increase in the workmen's fund, which for the first time exceeds the amount collected at the churches; the works collection being £1961 and the church £1956. The number of letters distributed last year was 6280. The total amount of money collected through the fund since its commencement in 1870 had been £63,000, while in the same period 70,000 letters had been distributed.

Stockton.

Last week an interesting ceremony was witnessed in Baldersdale in connexion with the second of the three reservoirs to be constructed for the water-supply of Stockton and Middlesbrough and the surrounding towns. The Mayor of Stockton cut the first sod of this great reservoir. The first reservoir, the Hury, which is rapidly approaching completion, will have a storage capacity of from 800 to 900 million gallons; the second, in Blackton, will hold 460 million gallons; and the third, the Grassholme, which is a compensating reservoir, will contain 1,300,000 gallons. A vast expense is being incurred in this important water undertaking; but the increasing population of the Teeside towns, and the water required for domestic and manufacturing purposes, have left the local water board no other course but that which has been adopted. The site of the new reservoir is in Teesdale, not far from Cotherstone, in the midst of some of the very finest gathering grounds.—The Stockton Dispensary appears, from the account presented at the annual meeting, to be in a waning condition; its income is said to be gradually decreasing from the death of old subscribers. The increase of clubs to which workmen subscribe will also affect this, like many other local charities.

Newcastle-on-Tyne, Sept. 18th.

DUBLIN.

(FROM OUR OWN CORRESPONDENT.)

Reformatory and Industrial Schools, Ireland.

FROM the 37th report of the inspector it appears that there was no outbreak of contagious disease in any of the nine reformatories during the past year, and only five deaths amongst an average of 853 inmates, or about six per 1000, which must be regarded as favourable when contrasted with the general death-rate of the ordinary population. In the industrial schools the health of the inmates generally was good, but as these children are younger and come from a more destitute class than those sent to reformatories, the neglect experienced prior to committal make them more susceptible to disease. The only extensive outbreak of disease amongst the children of the industrial schools was at Booterstown, county Dublin, where fifty-eight of the inmates were attacked by typhus fever, and two deaths took place. Scarlatina broke out in several of the schools (eight), but no death took place. The deaths in industrial schools were chiefly the result of scrofula in its various phases; 51 were due to lung disease, 12 to brain affections, and 5 to mesenteric and bowel disease. The total deaths numbered 74, being at the rate of 9 per 1000. The diseases which the inspector (Dr. Plunkett O'Farrell) found most prevalent among the school children were ophthalmia, ringworm, and chilblains during the winter and spring months. The only way of checking purulent ophthalmia in schools is by constant medical inspection, minute attention to the lavatory arrangements, and a complete isolation of all acute cases; while among the hygienic measures nothing is so useful as the provision of a grass plot for play in dry weather. The dietary scale in the greater number of schools, the inspector states, was fairly liberal, but in many schools the quantity of new milk allowed fell short of what was required to build up the constitutions of the young.

The Dublin Barracks.

Some cases of sickness have recently occurred in Island Bridge Barracks, which at present is overcrowded, owing to the 5th Dragoon Guards having been sent there from the Royal Barracks. The Royal Dublin Society have offered their extensive premises at Ball's Bridge for the occupation of troops, in case the sanitary improvements in the Royal and the Richmond Barracks are not finished before the troops have to leave their camp in the Phœnix Park. The two regiments now under canvas there are very comfortable and appear to enjoy themselves very well, but it must be added that the weather of late has been greatly in their favour. So far as I can learn, there has been little or no sickness, and the men do not complain of their sojourn under canvas. Extensive alterations are being carried on at the Royal Barracks, so as to prevent the recurrence of fever and other zymotic affections; and the Royal and Palatine squares are now undergoing a thorough overhauling. As it was found that the quadrangular form of the buildings prevented free ventilation, portions of the buildings at the several angles have been removed, so as to allow fresh air to circulate; while in Palatine-square three of the angles have been taken down. Ventilators have been fixed in most of the rooms in the officers' quarters in this square—in fact, in all the rooms where an outbreak of fever has occurred,—and new flooring put down in a number of the rooms, louvre ventilators being placed at the top of each staircase so as to give thorough ventilation; while the ordinary paving selts in the stables have been replaced by concrete, and new concrete channel courses substituted for the old brick courses. The old prison, which has not been used for years, has also been demolished, and also the riding-school at the rear of Royal-square. It is not expected that the necessary alterations will be finished before next year.

Death of Dr. Henry Coulton.

This gentleman died at his residence in Dublin on the 16th inst., after a somewhat tedious illness, of paralysis. He acted for many years as medical officer in connexion with the South Dublin Union, and retired on a pension about ten years since. He was attended in his last illness by his old friend Mr. Kellock Barton, senior surgeon to the Adelaide Hospital, who was unremitting in his attentions to the deceased. Dr. Coulton was of a kind and amiable disposition, a true friend, and a Christian gentleman.

Health of Ireland for 1888.

The births numbered 109,557 and the deaths 85,892, both being under the average for the previous ten years. The excess of births over deaths was 23,665, but as the loss by emigration amounted to 78,684, there would appear to have been a decrease of 55,019 in the population during the year. As regards the 109,557 births, the rate afforded in proportion to the estimated population was 1 in 43·6, or 22·9 per 1000, which is 1·12 under the low average rate for the ten years 1878–87, and less than the rate in any of those years. The average percentage of the illegitimate births was 2·9, which compares favourably with the returns for most other countries. The registered deaths amounted to 85,892, being equal to 1 in 55·6, or 18·0 per 1000, which is somewhat under the average rate (18·4) for the previous ten years. The deaths of infants under one year old numbered 10,619, being equal to 9·7 per cent. of the number of births registered; while among children under five years of age 19,095 deaths occurred, a mortality equal to 35·9 in every 1000 of the living at that age. It will be seen from these figures that the rate of mortality among children still remains very high.

Zymotic Diseases in Dublin.

During the past three months the deaths from scarlatina numbered only 2, typhus fever 3, measles 30, and typhoid fever 33—returns which must be regarded as satisfactory when contrasted with previous quarters.

The Lord Justices have sanctioned the expenditure of £1600 upon improvements in the Ballinasloe District Lunatic Asylum.

The election of an assistant surgeon for St. Vincent's Hospital will take place on the 23rd inst.

Dublin, Sept. 17th.

PARIS.

(FROM OUR OWN CORRESPONDENT.)

The Population in France in 1888.

SOME remarkable figures have recently been placed officially before the public bearing on this question. For Frenchmen especially the question is ever an important one, and, touching so nearly as it does on the future position of France in the march of nations, the publishing of these figures showing the state of affairs has excited a considerable amount of attention and comment. Some take a gloomy view of the outlook, and go so far as to declare that France is "within measurable distance" of assuming a third- or fourth-rate place in the rank of nations; while others, on the other hand, declare that the figures only indicate that France will be the first to reach the summit in the climb which all nationalities are making towards a perfected civilisation, and that the turn of the others will arrive later on. France, it is pointed out, is not a colonising nation, and cannot with comfort support much more than forty millions. But no more can Germany or England, who, not without much misery and difficulty, find an outlet for their surplus population in emigration and colonisation, and emigration means merging into other nations, while even colonisation ends in the setting up of new nationalities, with destinies of their own to work out, and little in common with the mother country, unless it be the language. Comfort is taken in the belief that the days of gigantic empires are at an end, and that even "Imperial Federation," so dear to many of your countrymen, is a myth. But whatever side may be taken eventually in this political economists' discussion, there is no doubt that the figures, as published, are interesting reading to medical men. According to the return, the increase of births over deaths in 1888 amounted to 44,772, whereas in 1887 the increase was 56,536. This is certainly a striking falling off, and it is easy to see that at this rate the time is not far off when the quantity will become a *minus* instead of a *plus* one, and those who aim at the "perfected civilisation" scheme must see the necessity of arresting this downward progress if France is to remain numerically a great power. How it may be possible to arrest it is of course another matter. The number of marriages in the year 1888 were 276,848, divorces 4708, births 882,639, and deaths 837,867. As regards marriages, there were 212 less than in 1887, but as compared with 1886 the diminution was much more marked, amounting to no less than 6360. In 1888 there were granted 1072 more divorces than in 1887,

and 1758 more than in 1886. Taking France generally, there was one divorce in every 1585 existing marriages; but in the Department of the Seine alone there was one divorce in every 419 homes. The total number of births was 16,794 less than 1887. This is the greatest diminution since 1871. Nor does the diminution show much sign of lessening, if one may judge by the following figures. In 1885 there were 13,200 less births than in the preceding year; in 1886, 11,720 less than in 1885; in 1887, 13,505 less than in 1886. On the other hand, the number of illegitimate births go on increasing. There were 7·5 per cent. in 1881, 8 per cent. in 1885, and 8·5 per cent. in 1888. In the Department of the Seine, of every 100 children born in 1888, 25 were illegitimate; while in Brittany they only amounted to 2 per cent. The deaths in 1888 amounted for France generally to 21·9 for every 1000 persons. The departments returning the greatest birth-rate also show the greatest death-rate, the mortality being most marked amongst infants of tender age.

Ocular Massage.

A communication was recently made to the Academy of Medicine on this rather novel, or, as it would appear, modification of the ancient, use of massage by M. Costomiris of Athens. He said that if the ancient Greeks employed massage in eye affections it was not by means of the pulp of the finger on the conjunctiva and cornea, such as he had been in the habit of employing for many years. His method was, after everting the lids, to spread a thickish layer of fine boracic acid powder on the conjunctiva, and then with one of the fingers to rub in massage fashion the parts so covered with the powder. He then washes the eye in boracic acid solution, and for the few following days applies a lotion composed of 1 in 200 of nitrate of silver to prevent the inflammation which sometimes follows the manipulation. He next rubs the outer surface of the lids in the same way, which he finds lessens any pain caused by the internal massage. It is as well in every case to begin with a short and very light friction, then to increase it and again decrease it, and this should be repeated once daily and continued for two or three weeks after cure. M. Costomiris speaks very highly of this method in the treatment of granular lids or follicular conjunctivitis, in parenchymatous keratitis, in hypopyon, in infiltrations, and in abscesses or ulcers of the cornea; but in deep-seated ocular mischief he cannot recommend it.

Paris, Sept. 17th.

THE SERVICES.

ARMY MEDICAL STAFF. — Surgeon-Major Ignatius McDonogh O'Farrell, F.R.C.S. Ireland, to be Brigade Surgeon, ranking as Lieutenant-Colonel, vice C. S. Wills, C.B., granted retired pay (dated Aug. 24th, 1889); Surgeon William Parsons Feltham, from half pay, to be Surgeon, in succession to Surgeon-Major J. A. Smith, deceased (dated Aug. 15th, 1889).

ARMY MEDICAL SCHOOL. — Deputy Surgeon-General Henry Cayley, Bengal Medical Establishment (retired), to be Professor of Clinical and Military Medicine (dated June 4th, 1889).

ARMY MEDICAL RESERVE OF OFFICERS. — Surgeon-Major Burford Norman, having resigned his commission in the 1st Volunteer Brigade, Southern Division Royal Artillery, ceases to be an Officer of the Reserve (dated Sept. 18th, 1889); Surgeon John Alexander Mackenzie, M.B., resigns his commission (dated Sept. 18th, 1889); Surgeon Robert Balfour Graham, F.R.C.S. Edin., 1st Fifeshire Artillery Volunteer Corps, to be Surgeon, ranking as Captain (dated Sept. 18th, 1889).

INDIA OFFICE.—The Queen has approved of the following promotion among the Officers of the Staff Corps and Indian Military Forces made by the Governments in India (dated Sept. 17th, 1889):—Bengal Medical Establishment—Surgeon-Major Henry Black Purves to be Brigade Surgeon (dated June 16th, 1889).

ADMIRALTY.—In accordance with the provisions of Her Majesty's Order in Council of April 1st, 1881, Fleet Surgeon Stephen Sweetnam has been placed on the Retired List at his own request, with permission to assume the rank of Deputy Inspector-General of Hospitals and Fleets (dated Sept. 10th, 1889).

The following appointments have been made:—Surgeons George Welch to the *Defiance*, additional for temporary service, Jeremiah Sugrue, to Haslar Hospital, and William G. Stott, M.B., to the *St. Vincent* (all dated Sept. 19th, 1889); Fleet Surgeon Samuel Bamfield to the *Durham;* Staff Surgeon Herbert E. Marsh to the *Serapis;* Staff Surgeon Edward R. Mulock to the *Assistance;* and Staff Surgeon William M. Rae to the *Brilliant*, temporarily (dated Sept. 26th, 1889).

VOLUNTEER CORPS. — *Artillery:* 1st Inverness-shire: Second Lieutenant H. W. Mann, M.B., is appointed Acting Surgeon (dated Sept. 14th, 1889).—*Rifle:* 3rd Volunteer Battalion, the Prince Albert's (Somersetshire Light Infantry): Acting Surgeon J. A. Bright resigns his appointment; also is permitted to retain his rank, and to continue to wear the uniform of the Battalion on his retirement (dated Sept. 14th, 1889).—2nd (Berwickshire) Volunteer Battalion, the King's Own Scottish Borderers: David Skinner, Gent., to be Acting Surgeon (dated Sept. 14th, 1889).—2nd Volunteer Battalion, the Duke of Cornwall's Light Infantry: Acting Surgeon F. D. S. McMahon resigns his appointment (dated Sept. 14th, 1889).—3rd Volunteer Battalion, the Hampshire Regiment: Captain C. S. Ticehurst is appointed Acting Surgeon (dated Sept. 14th, 1889).—2nd Volunteer Battalion, the King's (Shropshire Light Infantry): Acting Surgeon C. H. Gynn, M.D., to be Surgeon (dated Sept. 14th, 1889).

Obituary.

JOHN F. GILLIES, M.D., L.R.C.S.

THE above-named gentleman died at Dunedin, New Zealand, on July 5th, after a lingering illness. He was born in the island of Skye in 1847. As a student in Edinburgh and Aberdeen he gained the highest distinction. He took the degree of M.B. at Aberdeen in 1869, passing the whole of the professional examinations at one term—a feat which, as Professor Harvey remarked, is "almost never attempted; and the manner in which Dr. Gillies accomplished it evinced mental capacity of a singularly high order." He acted for a time as assistant to Dr. Handyside in the anatomical classes of the Edinburgh School of Medicine, and engaged also in original investigations of a physiological nature, for which he possessed great aptitude, but circumstances did not permit him to follow out his bent. He entered on general medical practice in Melksham, Wiltshire, and for a short time in London. He went to Dunedin in 1874, where he was soon afterwards appointed health officer of the city. As such he took charge of the Fever Hospital, which was erected in consequence of an outbreak of scarlet fever, and by his skilful management he achieved the best results. He was also appointed in 1876 Lecturer on Clinical Medicine at the Otago University. He took a keen interest in all matters affecting the social, educational, and political interests of the community; but from his retiring disposition he preferred to publish his numerous communications on such subjects anonymously. He was a proficient in Celtic literature, to which he devoted much attention. His skill and sympathy and kindness were very highly appreciated by his patients, and very specially by those in humble circumstances, to whom he rendered needed help with ungrudging generosity. He was married in 1879 to Miss Carnegie (granddaughter of the late Captain David Carnegie of Edinburgh), who survives him.

DR. HERMANN REUTER.

ANOTHER medical hero of the Franco-German war died on the 4th inst. at Nürnberg, in the person of the Landgerichtsarzt, Dr. Hermann Reuter. He was born in May, 1826, and having completed the usual course at the Nürnberg Gymnasium, he proceeded to the Erlangen and Heidelberg Universities. At the former of these seats of learning he distinguished himself by his powers of organising the *Burschenschaft* for political as well as academic aims, and lived through the revolutionary upheaval of 1848 in keen sympathy with the movement, but without compromising his professional career. Having graduated creditably as Doctor of Medicine, he served as volunteer assistant surgeon in the Schleswig-Holstein campaign—an

experience by which he profited largely and well. His next step was to settle down in his native Nürnberg as a medical practitioner, in which capacity he not only won the confidence of the community, but so attracted the notice of the Government that in 1861 he was appointed Bezirksgerichtsarzt (head medical consultant of the district court). Other professional honours fell to his share—that of Medicinalrath in 1880, and that of the Michaelsorden of the fourth class on New Year's Day of the present year. His chief distinctions, however, and those he mostly prized, were the posts that seemed spontaneously to come to him in the hygienic and charitable undertakings of his native city and province. He contributed towards founding the local medical association, and was an able and active member of the Aerzte-Bund (medical confederation) of Germany. But it was in the war time of 1870–71, particularly in his work on behalf of the wounded of either belligerent army, that he gave most striking evidence of his high qualities of head and heart. His fearless exertions under fire, and his nightly as well as daily service in the field ambulance, earned him the Bavarian Cross of Merit, the Memorial Cross of Saxony, and, above and beyond these decorations, the deep and enduring gratitude not only of his compatriots but of the opposing nationality. In after years he enhanced his reputation in the law courts as an expert in medico-legal cases, while, outside his professional engagements, he was an ardent votary of liberal principles in Church and State—a political leader respected even by the opposite interest not more in Nürnberg than throughout Bavaria. His powers, taxed as they had been by an exceptionally laborious and eventful life, latterly showed symptoms of decline, which, assuming an acute form, carried him off in his sixty-fourth year.

Medical News.

BOY SUICIDES.—On Thursday two boys, aged respectively thirteen and sixteen, are reported to have committed suicide; one by hanging himself, the other by swallowing laudanum.

LEAD POISONING.—A large number of the inmates of the Keighley workhouse and infirmary are stated to be suffering from the effects of lead poisoning. The water, supplied by the Corporation, is suspected to be the cause of the evil.

BIRMINGHAM HOSPITAL SUNDAY.—The collections on behalf of the General Hospital, which will this year receive the proceeds, will be made on Oct. 27th next. Great exertions are being made in the town to recover the ground lost during late years.

SOCIETY OF MEDICAL OFFICERS OF HEALTH.—A monthly meeting of the North-Western Branch of the Society of Medical Officers of Health was held in Manchester last week, at which M. Bobrownicki, Professor of Mathematics in Russia, read a paper on a new Patented Method for the Treatment of House Refuse. His improvements consisted in the treatment of the putrescible matters by direct contact with the condensible and suspended matters in the gases arising from the ordinary combustion of fuel, or from the distillation at a comparatively low temperature of coal, tar, resin, and other fuels and hydrocarbons. By this means the gaseous products arising and resulting from the imperfect combustion and distillation were deprived of their constituents, which were objectionable in the atmosphere, but were of considerable value to the agriculturist.

BEQUESTS AND DONATIONS TO HOSPITALS.—Mr. Quilter, M.P., has given £2000 to the Felixstowe Convalescent Home.—The late Mr. Wm. Stirling of Glasgow has left by his will £20,000 to Glasgow charities; the three leading infirmaries get £5000 each.—Dr. Edmond of Kingswells has presented £300 to the Aberdeen Hospital for Incurables, as an additional donation in place of future annual subscriptions.—The late Surgeon-General David Wyllie, formerly of Montrose, has left £2500 to the Montrose Infirmary, and a like amount to the public charities.—Mrs. Walter Parlane, late of Somerset-place, Glasgow, has by her will (after providing for legacies to relatives and subject to an annuity still payable) bequeathed to the Glasgow Royal Infirmary and the Glasgow Royal Hospital for Sick Children £1000 each.

RABIES.—According to the *London Gazette*, the number of dogs in England reported during the week ending Sept. 7th as afflicted with rabies was nine, against twelve in the previous week. All were slaughtered. Of the nine diseased animals only one belonged to London proper, whilst two appertained to Kent and Surrey each, and one to Lancaster, Middlesex, Sussex (Eastern Division), and York (West Riding) respectively. In spite of the muzzling order, there appears to be still a steady average of nearly a dozen cases of rabies each week. What the number would have been had the muzzling order not have been enforced may best be left to the imagination. Even as it is, the "order" is scandalously ignored in the suburbs of London; whilst, to make the edict thoroughly effective, it should be made universal; and, furthermore, the authorities should see that the muzzling is carried out.

PROVINCIAL SUNDAY AND SATURDAY HOSPITAL COLLECTIONS.—The Welwyn Hospital Sunday collection on Aug. 11th amounted to £13 13*s.*, which sum has been divided between the Hertford and Hitchin Infirmaries and the Hertford Convalescent Home. The St. Albans (Herts) Hospital Sunday collection on Aug. 18th produced £24 2*s.* The Bank Holiday Hospital Gala held at Leeds on the 5th ult., in aid of the Leeds medical charities, realised about £600. The Hospital Saturday collection at Clacton-on-Sea, on behalf of the Essex and Colchester Hospital, held on the 17th ult., amounted to £50 4*s.* 7*d.* The usual annual Church parade of the Friendly Societies, in aid of the Bath Royal United Hospital, on Sunday, August 25th, produced £26. The Hospital Saturday collection at Scarborough, on the 7th inst., towards the funds of the Scarborough Hospital and Dispensary, amounted to £182 12*s.* A church parade of the United Friendly Societies of Teignmouth on Sunday, the 1st inst., on behalf of the Teignmouth Infirmary, produced £21 10*s.* The Maidenhead Friendly Societies' Hospital Sunday collection on the 8th inst., on behalf of the Maidenhead Cottage Hospital, amounted to £35 7*s.* 5*d.* The Hospital Sunday collection on the 15th inst. at Dartmouth amounted to £24 18*s.* 11*d.*; and that of Northallerton on the same day realised £6 3*s.* 6*d.*

METROPOLITAN ASYLUMS BOARD.

Return of Patients remaining in the several Fever Hospitals of the Board at midnight on September 17th, 1889.

Hospital.	Beds occupied.						Total accommodation.
	Scarlet fever.	Diphtheria.	Typhus fever.	Enteric fever	Other diseases.	Total.	
Eastern Hospital	218	57	1	47	4	327	442
North-Western Hospital	232	33	..	5	..	270	435
Western "	170	11	..	5	..	186	262
South-Western "	..	..	..	..	..	..	402
South-Eastern "	273	15	1	20	2	311	462
Northern "	212	..	..	..	..	212	480
Totals	1105	116	2	77	6	1306	2483

Appointments.

Successful applicants for Vacancies, Secretaries of Public Institutions, and others possessing information suitable for this column are invited to forward it to THE LANCET *Office, directed to the Sub-Editor, not later than 9 o'clock on the Thursday morning of each week for publication in the next number.*

BROWN, H. B., M.D., B.S.Lond., F.R.C.S. Eng., has been appointed House Physician to the Wolverhampton and Staffordshire General Hospital.

CALDERWOOD, GEORGE, M.D., M.B., C.M.Glasg., has been reappointed Medical Officer of Egremont, Cumberland.

ELSOM, F. J., L.R.C.P., L.M.Edin., M.R.C.S., has been reappointed Medical Officer and Public Vaccinator of Cuckney District, Worksop Union.

FISHER, P. C., F.R.C.S., L.S.A., has been appointed Medical Officer of Sarratt District, Watford Union.

GABE, J. REES, M.D., M.R.C.S., L.S.A., has been appointed Public Vaccinator for Holborn, vice J. Norton, M.R.C.S., L.S.A., deceased.

GLINN, C. F., L.R.C.P.Lond., M.R.C.S., L.S.A., has been appointed Medical Officer of Hatherleigh District, Okehampton Union.

GREENE, A. J., L.R.C.S., L.K.Q.C.P.Irel., has been appointed Medical Officer of the Burwash District, Ticehurst Union.

MCWHANNELL, L., M.B., C.M.Glas., has been appointed Senior House Surgeon to the Birkenhead Borough Hospital, vice E. Scott Sugden, M.B., M.R.C.S., resigned.

MEDCALF, E. S., L.R.C.P., L.M. Edin., M.R.C.S., L.S.A., has been appointed Medical Officer for the Town of Hove, Sussex.

MUGFORD, S. A., L.R.C.P.Lond., M.R.C.S., has been appointed Medical Officer of Ardleigh and Great Bromley Districts, Tendring Union.

PACKMAN, ALFRED C. A., M.D., M.R.C.S., has been appointed Medical Officer of Health for the Rural Sanitary District of the Hoo Union.

PURSLOW, C. E., M.D.Lond., M.R.C.S., Honorary Medical Officer to the Birmingham Lying-in Charity, has been appointed Honorary Obstetric Officer to the Queen's Hospital, Birmingham, vice A. T. Hawkins, F.R.C.S., resigned.

REED, LESTER, F.I.C., F.C.S., has been appointed Public Analyst for the Borough of Croydon.

SNELLEN, HERMAN, jun., M.B. and Mast. Surg. Utrecht Univ., has been appointed House Surgeon to the Bristol Eye Hospital.

THRESH, J. C., D.Sc.Lond., M.B., B.Ch.Vic., has been appointed Medical Officer of Health to the combined Sanitary Districts of Chelmsford and Maldon.

Vacancies.

For further information regarding each vacancy reference should be made to the advertisement.

BOSCOMBE HOSPITAL AND PROVIDENT DISPENSARY, Bournemouth.—Resident Medical Officer. Salary £60 per annum, with board and residence at the hospital. Not more than five testimonials of recent date to be sent.

EAST LONDON HOSPITAL FOR CHILDREN, Shadwell, E.—House Physiciancy. No salary, but board and lodging are provided free of cost.

EVELINA HOSPITAL FOR SICK CHILDREN, Southwark-bridge-road, S.E.—House Surgeon. Salary £70, with board, washing, and residence.

FLINTSHIRE DISPENSARY, Secretary, Bagillt-street, Holywell.—House Surgeon. Salary £100 per annum, with furnished house, rent and taxes free; also coal, lights, water, and cleaning, or in lieu thereof the sum of £20 per annum.

GENERAL HOSPITAL, Birmingham.—Resident Registrar and Pathologist. Salary £100 per annum, with board and lodging. Also Assistant House Surgeon, for six months. No salary, but residence, board, and washing will be provided.

HOSPITAL FOR DISEASES OF THE THROAT, Golden-square, London, W.—Resident Medical Officer. Salary £50 a year, with board and lodging.

HULL FRIENDLY SOCIETY MEDICAL INSTITUTE, Brook-street, Hull.—A fully qualified Man to take charge of, and manage the above. Salary 170 guineas per annum, with midwifery fees, house, coals, and gas.

LEICESTER INFIRMARY AND FEVER HOUSE, Leicester.—House Surgeon. Salary £120 for the first year, rising at the rate of £10 per annum until the fourth year. Board, apartments and washing will be provided.

LONDON FEVER HOSPITAL, Liverpool-road, Islington, N.—Assistant Resident Medical Officer. Salary £120 per annum.

METROPOLITAN HOSPITAL, Kingsland-road, N.E.—Junior House Surgeon. Salary £40 per annum, with board and residence.

NORTHUMBERLAND COUNTY ASYLUM, Morpeth.—Clinical Assistant. No salary, board and residence provided.

ROYAL ALBERT EDWARD INFIRMARY AND DISPENSARY, Wigan.—Junior House Surgeon. Salary £80 per annum, with apartments and rations (exclusive of wines, spirits, and washing).

ROYAL LONDON OPHTHALMIC HOSPITAL, Moorfields, E.C.—Junior House Surgeon. Salary £50 per annum, with board and apartments.

ROYAL WESTMINSTER OPHTHALMIC HOSPITAL, King-William-street, West Strand.—Surgeon.

SOUTH DEVON AND CORNWALL HOSPITAL, Plymouth.—House Surgeon. Salary £100, with board and rations.

Births, Marriages, and Deaths.

BIRTHS.

CONNOLLY.—On Sept. 17th, at the Royal Arsenal, Woolwich, the wife of Surg.-Major B. Bloomfield Connolly, M.A., F.R.C.S., of a daughter.

DINGLE.—On Sept. 17th, at 46, Finsbury-square, E.C., the wife of Wm. A. Dingle, of a daughter.

GARDNER.—On Sept. 13th, at The Avenue, Mill-hill-park, Acton, the wife of Dr. W. T. Gardner, of a daughter (Marjorie).

JONES.—On Sept. 5th, at Longworth-road, Oxford, the wife of Arthur Wentworth Jones, B.A., M.R.C.S., L.R.C.P., of a son.

KYLE.—On Sept. 15th, at St. Andrews, N.B., the wife of Dr. Hamilton Kyle, of a daughter, stillborn.

MARSH.—On Sept. 14th, at Russell-road, Kensington, the wife of W. Blake Marsh, L.R.C.P., M.R.C.S., late of the P. and O. Co.'s Service, of a son.

NICHOLS.—On Sept. 7th, at Alderney, the wife of Surgeon F. P. Nichols, M.B. Cantab., Army Medical Staff, of a daughter.

MARRIAGES.

BARRINGTON—TAYLOR.—On Sept. 12th, at St. Nicholas' Church, King's Lynn, Frederick Albert Barrington, L.K. and Q.C.P., and L.R.C.S.I., of Chapel-street, King's Lynn, to Frances Emma, only daughter of the late Charles Taylor, Esq., of King's Lynn, Norfolk.

CROSS—HAWKES.—On Sept. 11th, at St. Matthias' Church, Torquay, Francis Richardson Cross, M.B. Lond., F.R.C.S., of Clifton, eldest son of the late Rev. Joseph Cross, M.A., Vicar of Merriott, Somersetshire, to Eva Beatrice, elder daughter of the late Capt. Henry Hawkes, R.N., of Torquay.

DAY—MITCHELL.—On Sept. 10th, at Zion Church, Rathgar, William Bullen Day, Army Medical Staff, son of Arthur M. Day, Rostrevor-terrace, to Ruth, younger daughter of the late George Mitchell, J.P., Hopeton, Rathgar, Dublin.

GATHERGOOD—BEATLEY.—On Sept. 11th, at St. Mark's Church, West Hackney, Benjamin William Gathergood, M.R.C.S., L.S.A., son of John Gathergood, Surgeon, of Terrington St. John, to Kate Mary (Kitty) Beatley, second daughter of Thomas Gage Beatley, Shipowner, of Leadenhall-street, London, and Amhurst-road, Hackney Downs.

GRIFFITH—LOVELL.—On Sept. 18th, at St. Mathias', Earl's-court, Dr. R. Glyn Griffith, of Allahabad, N.W.P., India, to Edith Lilian Grimsted, only daughter of the late John Lovell, Esq., of Portledge House, Newbridge-hill, Bath, Inspector-General of Hospitals, Madras Presidency.

HAY—MACGREGOR.—On Sept. 14th, at Holy Trinity Church, Llandudno, by the Right Rev. the Bishop of Bangor, and the Rev. J. Morgan, Rector of the Parish, Henry Hay, M.B., C.M. Edin., and Surgeon to the Prison of Edinburgh, to Jessie Mackay Macgregor, widow, daughter of the late Rev. David Nicol, of Dalgety, Fifeshire, N.B., and niece of James Nicol, M.D., Llandudno.

HAYNES—NEWMAN.—On Sept. 11th, at the Parish Church, Bottisham, Cambs., Walter F. Haynes, L.R.C.P., of Stansted, Essex, to Rosa, second daughter of Edward Newman, Esq., of the Parsonage, Bottisham.

MACKAY—BOURNE.—On Sept. 12th, at Tynemouth Parish Church, by the Rev. Canon Brutton, Vicar and Rural Dean, assisted by the Rev. R. Raggett, M.A., William Murray Mackay, L.R.C.P., L.R.C.S., L.F.P.S.G., &c., of North Shields, second son of James Mackay, Esq., Geiselittle House, Caithness, N.B., to Edith Rose, third daughter of the late William Bourne, M.A., M.D., J.P., of North Shields.

MCKERCHAR—BRYER.—On Sept. 17th, at Christ Church, Forest-hill, Robert McKerchar, M.D., of Dalbeattie, Kircudbrightshire, to Edith, eldest daughter of William Bryer, of Sunderland-road, Forest-hill, and Barbican, London.

NICHOLSON—COX.—On Sept. 10th, at Hackney Parish Church, Thomas Tanner, only son of the late William Hunter Nicholson, M.R.C.S., of St Pancras, to Susan (Susie), eldest daughter of Isaac Cox, Esq., of Dalston.

TOPHAM—WORSICK.—On Sept. 11th, at North Parade Baptist Chapel, Halifax, by the Rev. Carey Hood, resident minister, assisted by the Rev. W. Gray, of Birchcliffe, Albert Stocks Topham, M.R.C.S., L.R.C.P. Lond., Prescott-street, Halifax, to Anna, eldest daughter of Richard Worsick, maltster, Halifax.

DEATHS.

BENTON.—On Sept. 8th, at Weymouth, after a few days' illness, Samuel Benton, M.R.C.S., of 2, Bennett-street, St. James's, second son of Philip Benton, of North Shoebury, Essex, aged 39.

DUCKWORTH.—On Sept. 14th, at Westgate-on-Sea, after a short illness, Annie Alicia, wife of Sir Dyce Duckworth, M.D.

EDSALL.—On Sept. 14th, at Clarence-road, Kew-gardens, Surrey, Samuel Bernard Alfred Edsall, M.R.C.S.Eng., second son of W. Viner Edsall, of Wimbledon, aged 31.

GARDEN.—On Sept. 14th, suddenly, at South Hampstead, Alexander Garden, M.D., late Brigade Surgeon I.M.D., aged 56.

HENDERSON.—On Sept. 7th, at Brighton, George Henderson, M.R.C.S., late of Upper Norwood, in his 30th year.

MURRAY.—On Sept. 16th, at Rickmansworth, Herts, John Leslie, younger son of Alexander Dalton Murray, M.B.

ROYSTON-PIGOTT.—On Sept. 14th, at Annandale, Grange Gardens, Eastbourne, George West Royston-Pigott, M.D., F.R.S., aged 70.

N.B.—A fee of 5s. is charged for the Insertion of Notices of Births, Marriages, and Deaths.

BOOKS ETC. RECEIVED.

BELL, GEORGE, & SONS, York-street, Covent-garden, London.
On the Motion of the Heart and Blood in Animals. By William Harvey, M.D. Willis's Translation, revised and edited by Alex. Bowie, M.D., C.M. 1889. Bohn's Select Library. pp. 147.

BLACKIE & SON, Old Bailey, London.
A Text-book of Organic Chemistry. By A. Bernthsen, Ph.D. Translated by George M'Gowan, Ph.D. 1889. pp. 544.

CORNISH BROTHERS, Birmingham, and SIMPKIN, MARSHALL & CO., London.
Notes on Medical Education. By Sir James Sawyer, M.D., F.R.C.P. 1889. pp. 113.

FISCHER, GUSTAV, Jena.
Die Allgemeine Pathologie. Zweiter Theil: Die Krankenhaften Störungen des Baus und der Zusammensetzung des Menschlichen Körpes (Allgemeine Pathologische Morphologie). Von Dr. Edwin Klebs. 1889. pp. 836.

LONGMANS, GREEN, & Co., Paternoster-row, London.
A Manual of Pathology. By Joseph Coats, M.D. Second Edition, revised and mostly rewritten, with 364 Illustrations. 1889. pp. 977. Price 31*s.* 6*d.*
The Rotifera, or Wheel-Animalcules. By C. J. Hudson, LL.D. Cantab., F.R.S., assisted by P. H. Gosse, F.R.S. Supplement. With Illustrations. 1889. pp. 64. Price 12*s.* 6*d.*
Tablets of Anatomy. By Thos. Cooke, F.R.C.S.Eng., M.D. Paris. Eighth Thousand. 1889. pp. 294. Price 7*s.* 6*d.*

LEWIS, H. K., Gower-street, London, W.C.
Hygiene and Public Health. By Louis C. Parkes, M.D. With Illustrations. 1889. pp. 471.
What to do in Cases of Poisoning. By W. Murrell, M.D., F.R.C.P. Sixth Edition. 1889. pp. 230.
On Bedside Urine-testing. A Clinical Guide to the observation of Urine in the course of Work. By Geo. Oliver, M.D., L.R.C.P. Fourth Edition. 1889. pp. 236.

MADRAS GOVERNMENT PRESS.
The Diseases of the Madras Famine of 1877–78. By Alex. Porter, M.D., F.R.C.S.Irel. 1889. pp. 253.

RENSHAW, HENRY, Strand, London, W.C.
On Static Electricity in Medicine, and Apostoli's Methods in the Treatment of Uterine and Peri-uterine Disease. By Henry McClure, M.D. With 16 Illustrations. 1889. pp. 160.

ROYAL GEOGRAPHICAL SOCIETY, Savile-row, London, W.
Hints to Travellers, Scientific and General. Edited for the Council of the Royal Geographical Society. By Douglas W. Freshfield, Hon. Secretary R.G.S., and Capt. W. J. L. Wharton, R.N., F.R.S. Sixth Edition, revised and enlarged. 1889. pp. 430. Price 6*s.*; to Fellows, at the Office of the Society, 4*s.*

SMITH, ELDER, & Co., Waterloo-place, London.
On the Principles and Exact Conditions to be observed in the Artificial Feeding of Infants: the Properties of Artificial Foods, and the Diseases which arise from faults of Diet in Early Life. By W. B. Cheadle, M.A., M.D.Cantab., F.R.C.P. 1889. pp. 209.
The Various Manifestations of the Rheumatic State as exemplified in Childhood and Early Life. Lectures delivered before the Harveian Society of London. By W. B. Cheadle, M.D. 1889. pp. 127.
An Elementary Treatise on Human Anatomy. By Joseph Leidy, M.D., LL.D. Second Edition, rewritten. With 495 Illustrations. 1889. pp. 950.

Gout: its Nervous Origin; by W. Tyrrell, M.R.C.S. (Beaumont & Co., London), price 1*s.*—Papers read before the Medico-Legal Society of New York from its Organisation; First Series; third illustrated edition (the Medico-Legal Journal Association, New York, Publishers, 57, Broadway).—Annual Report of the Health Commissioner, City of St. Louis, M.O. 1888-89. (Nixon-Jones Printing Company, St. Louis, 1889).—Klinische Beiträge zur Manuellen Behandlung der Frauenkrankheiten mitgetheilt; von Dr. Egon v. Braun (M. Breitenstein, Wien, 1889).—Diphtherie und Croup im Königreich Preussen in 2en Jahren, 1875-1882.—Ein Beitrag zur Ergründung, Einschränkung und Heilung dieser Krankheiten; von Dr. L. Brühl und E. Jahr. Mit einem Vorwort von Hofrath Prof. Dr. M. J. Oertel (Hirschwald, Berlin, 1889).—The Early Symptoms of some of the Infectious Fevers; by T. C. Railton, M.D., M.R.C.P. (J. Heywood, Manchester and London), price 2*d.*—The Conditions required for a Healthy House; by T. C Railton (J. Heywood, Manchester and London), price 2*d.*—The Operative Treatment of Hydatid Cysts of the Liver and Lungs; by J. D. Thomas, M.D., F.R.C.S. (Stillwell & Co., Melbourne, 1889).—Spinal Caries: Operative Treatment; Laminectomy, or so-called Trephining of Spine; by De Forest Willard, M.D., Ph.D. (W. J. Dornan, Philadelphia, 1889).—The Republic of Uruguay; the Country in the Paris Exhibition; General Description and Statistical Data, 1888-89 (Rockliff Brothers, Liverpool). The Surgical Treatment of Intestinal Obstruction; by N. Senn, M.D., Ph.D., Milwaukee, Wis.—Report on the Carbonic Acid Gas Treatment of Malarious Fevers; by C. G. R. Naylor, M.R.C.S.; second edition (Maclachlan and Stewart, Edinburgh, 1889).—The Modern Frankenstein; by George M. Gould, M.D. (the Open Court Publishing Co., Chicago).—Divonne-les-Bains Hydrothérapie: Renseignements généraux sur l'Etablissement et sur les Procédés Thérapeutiques employés à Divonne; par le Dr. E. Vidart (Charles Pfeffer, Genève, 1888).—Vorlesungen über Krankheiten der Harnorgane; von Prof. Dr. Robert Ultzmann (M. Breitenstein, Wien, 1889).—Divonne Hydrothérapie: Du Traitement de quelques formes de Paralysies, de Scolioses, des Neuralgies, du Rhumatisme chronique, &c., par la Gymnastique Suédoise (méthode de Ling); par le Dr. E. Vidart (A. Cherbuliez, Genève, 1889).—Notes on the Electrical Treatment of Uterine Fibroids, with Cases, by Dr. Tivy (J. Baker and Son, Clifton and London, 1889), price 1*s.*—The Mortality of Acute Lobar Pneumonia; by C. W. Townsend, M.D., and A. Coolidge, jun., M.D., of Boston (W. J. Dornan, Philadelphia, 1889).—Lavori dei Congressi di Medicina Interna; Primo Congresso, tenuto in Roma nell' Ottobre, 1888.—Handbook to the London University Matriculation Examination, containing the papers set in June, 1888, and January, 1889, with full solutions; edited by G. W. de Tunzelmann, B.Sc. ("The Electrician" Printing and Publishing Company, London, 1889), cloth, 3*s.*; paper boards, 2*s.* 6*d.*—Burrough's Duplicate Prescription-book (Burroughs, Wellcome, & Co., London), price 3*d.* each, or 2*s.* per doz. post free.—Shorthand for Students (especially adapted for the use of Students, Medical Men, and others); by an Amateur (W. H. Truslove, West Norwood, S.E.), price 6*d.*—Reading Practice in Cursive Shorthand, facsimiles of actual writing; by H. L. Callendar, M.D. (Clay & Co., London).

METEOROLOGICAL READINGS.

(Taken daily at 8.30 a.m. by Steward's Instruments.)

THE LANCET Office, September 19th, 1889.

Date.	Barometer reduced to Sea Level and 32° F.	Direction of Wind.	Dry Bulb.	Wet Bulb.	Solar Radia in Vacuo.	Maximum Temp. Shade.	Min. Temp	Rainfall.	Remarks at 8.30 A.M.
Sept. 13	30·22	S.W.	66	63	104	81	62	..	Cloudy
,, 14	30·35	E.	60	58	110	67	55	..	Cloudy
,, 15	30·35	N.	57	52	92	64	52	..	Cloudy
,, 16	30·43	E.	55	51	101	63	49	..	Cloudy
,, 17	30·28	S.E.	51	47	101	63	45	..	Fine
,, 18	30·28	S.E.	52	48	100	67	46	..	Foggy
,, 19	29·90	S.W.	57	52	74	62	49	..	Overcast

Notes, Short Comments, & Answers to Correspondents.

It is especially requested that early intelligence of local events having a medical interest, or which it is desirable to bring under the notice of the profession, may be sent direct to this Office.

All communications relating to the editorial business of the journal must be addressed "To the Editors."

Lectures, original articles, and reports should be written on one side only of the paper.

Letters, whether intended for insertion or for private information, must be authenticated by the names and addresses of their writers, not necessarily for publication.

We cannot prescribe or recommend practitioners.

Local papers containing reports or news paragraphs should be marked and addressed to the Sub-Editor.

Letters relating to the publication, sale, and advertising departments of THE LANCET *to be addressed "to the Publisher."*

We cannot undertake to return MSS. not used.

ANTISEPTICS AMONGST THE ANCIENTS.

DR. ANAGNOSTAKIS, Professor of Ophthalmology in the University of Athens, writing in the Greek medical journal, Γαλληνὸς, points out that the ancient Greek physicians were acquainted not merely with the words σῆψις (putrefaction) and ἄσηπτος (non-putrescible), but with the great fact of what we now term septic action, and with the importance of preventing it in surgical cases. Thus Hippocrates recommends that wounds should be dressed with hot water, and in the treatment he employed as far as possible rain-water, boiled, in order to render it aseptic: ἀποσήπεσθαι. He also recognised that suppuration was due to putrefaction, and that putrefaction was due to moisture; consequently he laid considerable stress on the drying of wounds. If the book "On Wounds" is carefully read, it will be found to form a small code of antiseptic or aseptic treatment. As to the substances used as dressings, we know the Good Samaritan employed oil and wine, and Hippocrates recommended tar in the form of ointment and sulphate of copper in the form of powder Besides these substances, bitters, aromatics, and resins were looked upon as valuable antiseptics.

Mr. T. G. Simpson.—1. We do not think the prospects of practice of a man unconnected with the Indian Medical Service would be good. 2. There is no special work on the subject. There is much information in Dr. Blanford's reports on the Meteorology of India; and Dr. Macnamara has published a work on Himalayan India, its Climate and Diseases (Churchill).

Mr. H. Booth.—We are not aware of any injurious results having arisen from the smoking of "asbestos" pipes.

THE RESPECTIVE CLAIMS OF PRINCIPALS AND ASSISTANTS AS TO FEES.

To the Editors of THE LANCET.

SIRS,—A. is called out to a case of drunkenness, and the case goes to court. A. is assistant to a doctor, and the latter has never bothered himself about the case. All the responsibility of the case lies upon the assistant A. The case comes on, and A. gets £1 1*s.* for his labour. The doctor, however, claims half fee. Note, however, that this case did not interfere in any way with the due performance of A.'s duties. Should A. not receive the whole payment, or is the doctor capable of claiming half fee?

Would you kindly find room for the insertion of the above in your journal, as also its solution? I am, Sirs, yours truly,

September, 1889. J. W. M.

*** A. must be considered as acting throughout as an assistant, not as principal. Apart from any contract to the contrary, as regards odd fees, it seems to us that the division of the fee was right.—ED. L.

OUR STUDENTS' NUMBER.

London School of Medicine for Women.—By a printer's error, the name of Mr. Dawson was substituted for that of Mrs. Dowson as lecturer on forensic medicine and hygiene.

J. O'C.—"The Italian Medical Association," like its German analogue, publishes an official report of its transactions, the papers and speeches being revised by their authors. The title of the volume in which the work of the Association's first meeting is recorded is: "Lavori dei Congressi di Medicina Interna." It numbers 400 pages; its editor is Dr. Edoardo Maragliano, and its publisher is Vallardi, of Milan.

Mr. J. Thomas.—What "new Act" is referred to?

REMARKABLE CASE OF MATERNAL IMPRESSION.

To the Editors of THE LANCET.

SIRS,—In one of your issues of some months ago—in May last I think—Dr. Russell of Paisley recorded a case of what he took to be one of "maternal impression." The cardinal facts of it were these. The wife of a glazier was *enceinte* at the time her husband unfortunately met with an accident—a severe wound of his right forearm—so serious that it was deemed necessary to take him to a hospital, where for a few days it was feared he would lose his hand. When her baby was born a nævus was found on the corresponding part of its forearm. This case is similar to that of the Countess of Cromerty, related by Sir Walter Scott in his "Tales of a Grandfather." She was in one of her pregnancies when her husband, the Earl, was tried and condemned to death for the part he took in the rebellion of 1745, caused by the Pretender Charles Stuart. Through the powerful intercession of his Countess and that of her friends he was pardoned by King George, but when afterwards his wife presented him with a son there was a mark of a broad axe on the child's neck, on that part of it where at one time she feared the headsman would have to operate. No doubt in both cases the anxious mothers thought intensely of their unfortunate husbands—the one in danger of losing his hand, the other his head. My case is more remarkable and interesting to medical men than either of these, and among several cases occurring in my practice recently it is the strangest and most extraordinary.

I was asked to see a woman in a neighbouring village who was being attended by a midwife; the latter, however, being unable to effect delivery by herself, wanted a doctor. On introducing my finger to ascertain the presentation I perceived something unusual—a long, round, and slightly tapering fleshy substance, which struck me at the time as feeling like the shape of an ordinary carrot, but of course not so hard. But to what part of the body this substance was attached was a puzzle, until I discovered what I took to be an ear and the eyes. I then concluded it must be attached to the head. Giving a dose of ergot, and stimulating the uterus by other methods as much as possible, I soon had come into the world what I at once saw was a monster. Instantly wrapping it into the piece of flannel ready to receive it, and without saying a word either to mother or nurse, I carried it into an adjoining bedroom, followed by the latter. Here I found the fleshy substance spoken of to be projecting from the floor of the skull, the roof of which was entirely absent, and so closely did this substance resemble a cow's teat—or, as the nurse called it, "pap"—that at the same instant we both made the same exclamation, "How like a cow's teat!" Cautioning the midwife to observe the strictest silence while I questioned the mother, we again proceeded to her room, when I quietly said to her, "I am sorry to have to tell you, Mrs. C——, that the child is dead, although it breathed a few moments; and perhaps it is as well, because the baby was not 'all right.'" "Ah!" said she, "I thought that such would be the case. What is wrong with it?" I replied, "Tell me your story first. What caused you to think it would not be 'all right'?" "Well," she proceeded, "I got a most awful scare when I was carrying it at the fore part of my time." Here she paused, but, leading her on by an inquiring "Yes?" she went on again—"One day I was in the cowhouse, milking the cow, sitting upon the stool beside her and milking away, when a rat or something in the roof made such a row all at once as to startle the poor animal almost out of her wits, and before I knew where I was she had tumbled me on the floor, milk and all together, and there I was, lying upon my back, still hanging on to the cow's pap like grim death, and thinking that I would be trampled to death every moment. Oh, the scare! I shall never, never forget it! for it made me downright ill and nervous for weeks after it. I could not get it out of my head, and kept dreaming about it even, and I feared all along for my child." Having thus spoken, she made signs for me to bend down my ear towards her, when she whispered: "Has it horns upon it, doctor?" Nothing would induce the mother or friends to give up the body of the child, nor would she allow me to touch it further, which caused me the sharpest disappointment. The "teat" seemed to be a prolongation of the spinal cord, and to be all there was to represent the brain. Otherwise the body was well developed and perfect.—Yours truly,

Revesby, Lincolnshire, Sept. 3rd, 1889. A. ROSS PATERSON, M.D.

FALLING HAIR.

To the Editors of THE LANCET.

SIRS,—With regard to the letter of "Scarpa" in your last issue, I beg respectfully to suggest the following remedy, which I, in my limited experience, have found most useful in such cases. ℞ Tinct. jaborandi, ℥ss.; lanoline, ʒiii.; and glycerine, ℥ii. A little to be rubbed in every night.

I am, Sirs, yours obediently,

Sept. 17th, 1889. F.

VACCINATION AWARDS.

Public Vaccinator.—The awards have in one sense certainly not been discontinued; but under the Local Government Act of last year they are now payable by the County Councils on receipt of the proper authorisation from the Local Government Board. Why delay occurs in the issue of the needed authority is by no means clear; and inquiry should be made at Whitehall with a view of ascertaining why awards which are long since overdue have not been paid.

Vera.—We regret that we cannot insert our correspondent's letter. His personal remarks on the examiners are, we believe, unjust. Our advice to him is to read up for the next examination.

M.D.—We would advise our correspondent to put himself in communication with the Secretary of the Income-tax Repayment Agency, 16, Artesian-road, W.

Dr. G. S. Middleton.—We shall be glad to receive the MS. for consideration.

FACE PRESENTATIONS.

To the Editors of THE LANCET.

SIRS,—Two consecutive cases of face presentation falling to my lot to attend on the same day seemed to me to be rather an unusual occurrence. I thought I might make a few remarks on them. The first, Mrs. H——, was in her third labour. On examining her I found the os nearly fully dilated, the membranes being still intact. These ruptured shortly after, and I then discovered the true nature of the case. The descent was fairly rapid until the chin appeared at the vulva, when from some cause there was considerable delay. Having fears for the safety of the child, I applied the forceps, and delivered without difficulty.

I was called to the second case, Mrs. M——, the same evening—her thirteenth pregnancy, all her previous ones being natural. The membranes had ruptured two days before. On examining her I found the face presenting high up at the brim, but fairly movable. Judging that there was plenty of room, I decided to leave the case to nature. For about an hour and a half there was little or no advance, although the pains were very good, when suddenly the head descended on the perineum, and the child was born without difficulty.

I have noticed that several authorities advocate in these cases either early version, or an attempt to rectify the malpresentation. In the first of my cases either of these methods was impracticable, as the head was quite fixed when assistance became needful; and in the second, which looked at first a proper case for turning, owing to the early delay, the procedure proved quite unnecessary after a little patient waiting. From my experience, I am inclined to leave such cases to nature; but I would be glad to hear the views of others of your correspondents on the subject.

I am, Sirs, yours truly,

Lancaster, Sept. 16th, 1889. GEO. R. PENROSE, L.K.Q.C.P.I., &c.

L.R.C.P.Lond.—Any legally qualified medical practitioner is entitled to take or use the title of Dentist, Dental Surgeon, &c.; but he cannot now register under the Dentists Act without taking the special diploma.

DISPENSING LABELS.

To the Editors of THE LANCET.

SIRS,—In reply to "A. R. J.," I think he will find the method I usually adopt an excellent one for preserving his labels, besides adding much to the appearance of the bottles and surgery. I have used it for the last three or four years, and with always satisfactory results. When the labels have been placed on the bottles and are quite dry, apply to them with an ordinary camel-hair pencil a coating of size, made liquid by means of a hot-water bath. When this has quite dried on, paint the labels over with ordinary varnish, or, if a darker colour is required, with varnish-stain. When this has properly dried, the labels will be ready, and with careful use will often last for two or three years, being easily washed with a damp sponge. Care should be taken to cover the whole of the label with size, else a dark patch will appear when the varnish or stain is applied. Trusting "A. R. J." will find this method answer as well as I have done,

I remain, yours faithfully,

Kingston-on-Thames, Sept. 16th, 1889. DISPENSER.

To the Editors of THE LANCET.

SIRS,—I would suggest to your correspondent, "A. R. J.," that if he varnishes the labels on his dispensing bottles with some white hard photographic negative varnish, he ought to find no difficulty in gently washing them and keeping them clean.—Yours obediently,

Belgrave-road, S.W., Sept. 15th, 1889. THOS. CHARTERS WHITE.

COMMUNICATIONS, LETTERS, &c., have been received from—Dr. Clifford Allbutt, Leeds; Dr. Corfield, London; Mr. F. Treves, London; Sir Henry Acland, Newcastle-on-Tyne; Mr. Peters, Salford; Dr. Judson, New York; Mr. Maggs, London; Mr. J. J. Clarke, London; Mr. R. M. Talbot, London; Mr. Emmett, Kingston; Mr J. Thomas; Dr. Auld, Glasgow; Mr. Robinson, London; Mr. Judge, London; Mr. T. Bond, London; Mr. Goodman, Birmingham; Mr. Johnston, Edinburgh; Dr. Jamieson, Shanghai; Dr. Hare, Manchester; Messrs. G. Back and Co., London; Mr. J. Ford, Oxford; Mr. Bickerton; Dr. James Oliver, London; Mr. J. L. Maxwell, London; Dr. A. Porter; Dr. Ross Paterson, Revesley; Mr. C. H. Wade, Chudleigh; Messrs. Arnold and Son, London; Mr. McGill, Leeds; Mr. T. C. White; Mr. Ellis Lever, Tan-y-Bryn; Mr. Hicks, Buntingford; Messrs. Bennett and Co., Manchester; Mr. T. Cooke, London; Dr. Tivy; Messrs. Bussey

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LETTERS, *each with enclosure*, are also acknowledged from—Mr. Dawson, Bournemouth; Mr. Murray, Rickmansworth; Messrs. Farrant and Vlieland, Exeter; Mr. Williams, Aberystwith; Messrs. Briant and Son, London; Mr. Walker, Monmouthshire; Mr. Williams, North Wales; Mr. Lathbury, Staffs; Dr. Pare, Derby; Mr. Dakers, Fence Houses; Dr. Pickworth, Suffolk; Mrs. Jagger, Yorkshire; Mr. Joly, London; Mr. Huggins, London; Mr. Ideson, Colne; Mr. Smith, Tredegar; Mr. Adam, Paisley; Dr. McClure, Cromer; Dr. Pattin, Hereford; Dr. Barsham, Surrey; Mr. Hindle, Loughboro'; Mr. Coward, Durham; Dr. Waters, Bourne; Mr. Tully, Hastings; Mrs. Thompson, Bath; Mr. Tyte, Minchinhampton; Mr. Smith, Durham; Miss West, Didsbury; Mr. Brownlow, Preston; Mr. Butler, London; Dr. Parsons, Burnley; Mr. Johnson, Harbotton; Mr. Weary, Ryde; Mr. Hamilton, Bradford; Mr. Cooke, Halifax; Dr. Hamilton, Hereford; Dr. Baines, Southport; Mr. Henderson, Ireland; Mr. Hartill, Wolverhampton; Dr. Winckworth, Beds; Mr. Purland, Woolwich; Messrs. Rowntree, Yorks; Mr. Lowgrove, Kent; Mr. Macdougall, Sussex; Mr. Gorman, Stafford; Mr. Haythorne, Bucks; Mr. Wood, Nottingham; Mr. Rigg, Cumberland; Mr. Campbell, London; Dr. Cavell, Hants; Mr. Owen, Portmadoc; Mr. McManus, Ireland; Mr. Sturdee, Essex; Dr. Taylor, Norwich; Mr. Beckitt, Oswestry; Mr. Monger, London; Mr. Waller, Peterboro'; Mr. Woodrooffe, Bristol; Miss Williams, Leamington; Dr. Purslow, Birmingham; Mr. Reece, Swansea; Messrs. Whittle and Bartlett, Liverpool; Mr. Dalmas, Leicester; Mr. Heywood, Manchester; Mr. Brownlow, Peterboro'; Mr. Gibson, Kidderminster; Mr. Stenhouse, Glasgow; Mr. Hughes, Birmingham; Mackay, North Shields; Stubbs, London; Simson, London; Thorne, Liverpool; M.B., Durham; L., London; X., London; School of Massage and Electricity, London; Marcus, London; Clinical Hospital for Women and Children, Manchester; Medicus, Southport; Hampstead Home Hospital; Mrs. H. L., Kilburn; Anthracosis, London; Ben Rhydding Hydropathic Co.; Xenos, London; Surgeon, London; Sunderland Infirmary; Max, London; Elder, Orkney; Cooper, London; The Coppice, Nottingham; T. F., Oldham; Medicus, Birmingham; R., London; Medicus, Leytonstone; Surgeon, Gloucestershire; H. F. C., London; General Hospital, Nottingham; Companion, Chard; Hull Royal Infirmary; Assistant, London; Surgeon, Taunton; Guyite, London; M.B., London; A. Z., London; H. L. M., London; Junior, London; M.B., Cluckie, Scotland; Manager, Cornwall; Trelawney, London; Medicus, London; Chemicus, London; D. C., London; Pumilio, London; X. Y. Z., Birmingham; Invicta, Tunbridge Wells; Melbourne, London; Nucleus, London; T. B. J., London.

Midland Evening News, The Englishman (Calcutta), The Times, Surrey Advertiser, Essex Times, Reading Mercury, Birmingham Daily Times, Weekly Free Press and Aberdeen Herald, Buxton Chronicle, Nottingham Evening Post, Hertfordshire Mercury, Lloyd's Weekly Newspaper, Alnwick and County Gazette, Torquay Times, North Devon Journal, Western Chronicle, Iron and Coal Trades' Review, Australian Trading World, Bell's Weekly Messenger, Warehousemen and Drapers' Trade Journal, &c., have been received.

Medical Diary for the ensuing Week.

Monday, September 23.

ROYAL LONDON OPHTHALMIC HOSPITAL, MOORFIELDS.—Operations, daily at 10 A.M.
ROYAL WESTMINSTER OPHTHALMIC HOSPITAL.—Operations, 1.30 P.M., and each day at the same hour.
CHELSEA HOSPITAL FOR WOMEN.—Operations, 2.30 P.M.; Thursday, 2.30.
ST. MARK'S HOSPITAL.—Operations, 2.30 P.M.; Tuesday, 2.30 P.M.
HOSPITAL FOR WOMEN, SOHO-SQUARE.—Operations, 2 P.M., and on Thursday at the same hour.
METROPOLITAN FREE HOSPITAL.—Operations, 2 P.M.
ROYAL ORTHOPÆDIC HOSPITAL.—Operations, 2 P.M.
CENTRAL LONDON OPHTHALMIC HOSPITAL.—Operations, 2 P.M., and each day in the week at the same hour.
UNIVERSITY COLLEGE HOSPITAL.—Ear and Throat Department, 9 A.M.; and Thursday, 9 A.M.

Tuesday, September 24.

GUY'S HOSPITAL.—Operations, 1.30 P.M., and on Friday at the same hour. Ophthalmic Operations on Monday at 1.30 and Thursday at 2 P.M.
ST. THOMAS'S HOSPITAL.—Ophthalmic Operations, 4 P.M.; Friday, 2 P.M.
CANCER HOSPITAL, BROMPTON.—Operations, 2 P.M.; Saturday, 2 P.M.
WESTMINSTER HOSPITAL.—Operations, 2 P.M.
WEST LONDON HOSPITAL.—Operations, 2.30 P.M.
ST. MARY'S HOSPITAL.—Operations, 1.30 P.M. Consultations, Monday, 2.30 P.M. Skin Department, Monday and Thursday, 9.30 A.M. Throat Department, Tuesdays and Fridays, 1.30 P.M. Electro-therapeutics, same days, 2 P.M.

Wednesday, September 25.

NATIONAL ORTHOPÆDIC HOSPITAL.—Operations, 10 A.M.
MIDDLESEX HOSPITAL.—Operations, 1 P.M.
ST. BARTHOLOMEW'S HOSPITAL.—Operations, 1.30 P.M.; Saturday, same hour. Ophthalmic Operations, Tuesday and Thursday, 1.30 P.M. Surgical Consultations, Thursday, 1.30 P.M.
ST. THOMAS'S HOSPITAL.—Operations 1.30 P.M.; Saturday, same hour.
LONDON HOSPITAL.—Operations, 2 P.M. Thursday & Saturday, same hour.
SAMARITAN FREE HOSPITAL FOR WOMEN AND CHILDREN.—Operations, 2.30 P.M.
GREAT NORTHERN CENTRAL HOSPITAL.—Operations, 2 P.M.
UNIVERSITY COLLEGE HOSPITAL.—Operations, 2 P.M.; Skin Department, 1.45 P.M.; Saturday, 9.15 A.M.
ROYAL FREE HOSPITAL.—Operations, 2 P.M., and on Saturday.
KING'S COLLEGE HOSPITAL.—Operations, 3 to 4 P.M.; Friday, 2 P.M.; Saturday, 1 P.M.
CHILDREN'S HOSPITAL, GREAT ORMOND-STREET.—Operations, 9.30 A.M.; Surgical Visits on Wednesday and Saturday at 9.15 A.M.

Thursday, September 26.

ST. GEORGE'S HOSPITAL.—Operations, 1 P.M. Surgical Consultations, Wednesday, 1.30 P.M. Ophthalmic Operations, Friday, 1.30 P.M.
CHARING-CROSS HOSPITAL.—Operations, 2 P.M.
UNIVERSITY COLLEGE HOSPITAL.—Operations, 2 P.M.; Ear and Throat Department, 9 A.M.

Friday, September 27.

ROYAL SOUTH LONDON OPHTHALMIC HOSPITAL.—Operations, 2 P.M.

Saturday, September 28.

MIDDLESEX HOSPITAL.—Operations, 2 P.M.
UNIVERSITY COLLEGE HOSPITAL.—Operations, 2 P.M.; and Skin Department, 9.15 A.M.

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